

Construction



An all-time record value of \$2,301,493,000 was established for southern construction in the first quarter of this year.

More than two-thirds of the figure was made up of industrial projects valued at \$1,542,016,000. Other elements were \$277,562,000 for private building; \$217,627,000 for public building; \$134,963,000 for heavy or engineering projects and the \$129,325,000 for highways and bridges. All but one category represented increases.

The value tabulated in March for projects below the Mason and Dixon line was \$577,160,000, a substantial increase of over two hundred and fifty per cent when compared with the same month of last year.

Included in the March figure were \$344,013,000 for industrial construction; \$80,272,000 for public building; \$56,114,000 for private building; \$49,511,000 for heavy engineering construction and \$47,250,000 for highways and bridges.

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APRIL 1951

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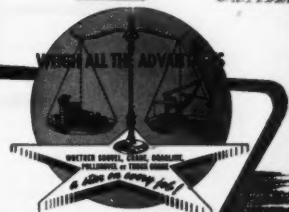
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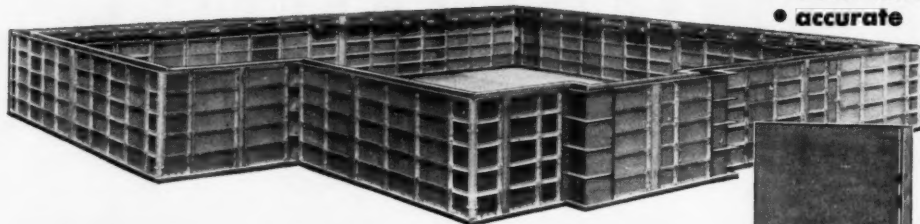
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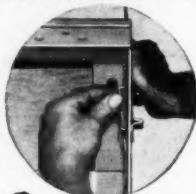
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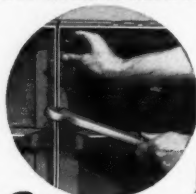
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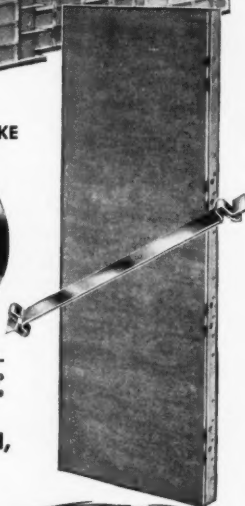
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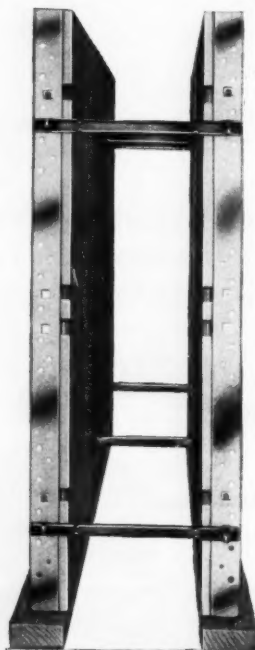
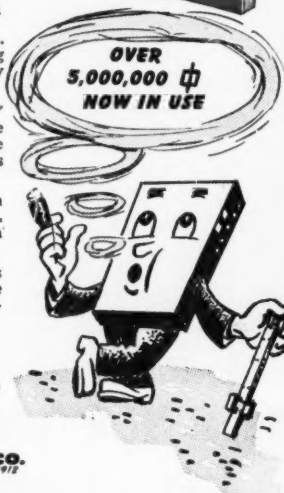
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A.R.B.A. Urges Engineer Operated County Roads

The 260 miles of Federal-aid secondary highway improvements completed by Louisiana in the last five years cost \$50,000 per mile, the Third Annual Louisiana Highway Transportation Conference, in session at Louisiana State University, Baton Rouge, was told last month.

"Since the 1944 Federal-Aid Highway Act became effective, Kansas has completed 5,025 miles of its secondary program at an average cost of \$5,000," declared Ben F. Ostergren, Washington, D. C., manager of the American Road Builders' Association's municipal and county and local roads divisions, in an address emphasizing need for engineer-administered county highway departments.

"In Iowa, the figures are 3,215 miles at an average cost of approximately \$10,000 per mile," he continued. "In Minnesota, they are 3,544 miles at less than \$9,000 per mile. If state legislatures would eliminate some of the obstacles to efficient operation, with the aid of sympathetic and cooperative state highway departments, local units of government would be better able to assume their responsibilities in improving the country's local roads. The administrative practices of the counties have been developed from statutes enacted in the horse and buggy days, and some have not been changed since the turn of the century."

Calling for a balanced highway program, including secondary and local road improvements to provide better traffic distribution and to eliminate congestion, Mr. Ostergren warned against concentrating all highway construction efforts on principal thoroughfares exclusively.

"A more efficient and safer transportation system, and one suited better to emergencies that may develop in today's uncertain conditions, can be provided by not neglecting our county and rural routes," he said. "In the 1920's, the country enjoyed its biggest road building decade, because everybody understood that mass production of automobiles meant that we must have more and better roads. Our investments in highways have paid big dividends. Today, 30 years and 30 million cars later, we must do no less.

"We must unite for the adoption of a sound, businesslike philosophy that roads are essential to the physical, social, cultural and economic welfare of the people and, as such, must be built on a continuing and long range basis—for peace or for war.

"Good highways are essential to our way of life, and we need good highways today more than ever, at a time when we have embarked on an accelerated program of preparations calling for unprecedented production and the speedy and orderly transportation of the outpourings of that production with which we mean to impress any potential enemy."



APRIL 1951
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SAMUEL A. LAUER
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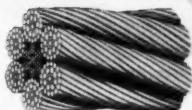
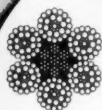
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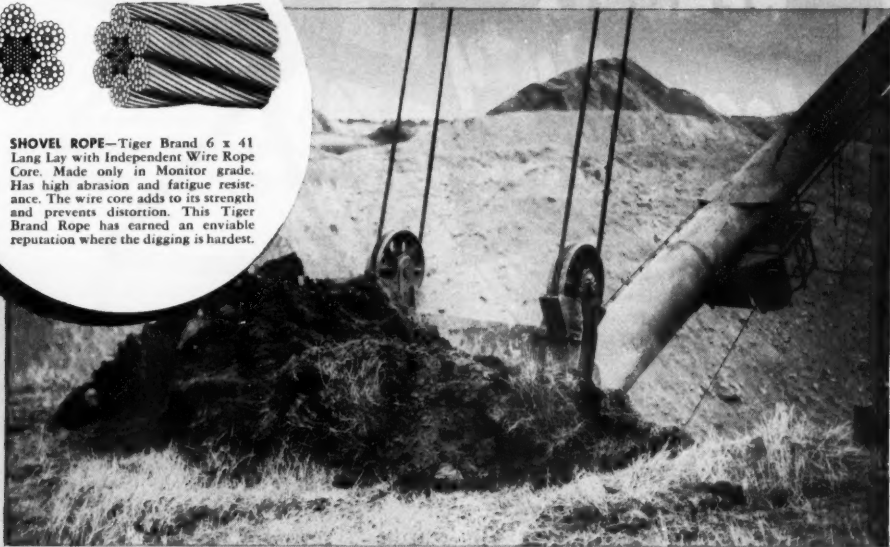


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Some types of ropes are good in mud and sand—others are not. Some can stand bending fatigue caused by small sheaves, others break up under this abuse. The point is—can *you* tell by looking at a rope whether or not it will be a "winner" on your job?

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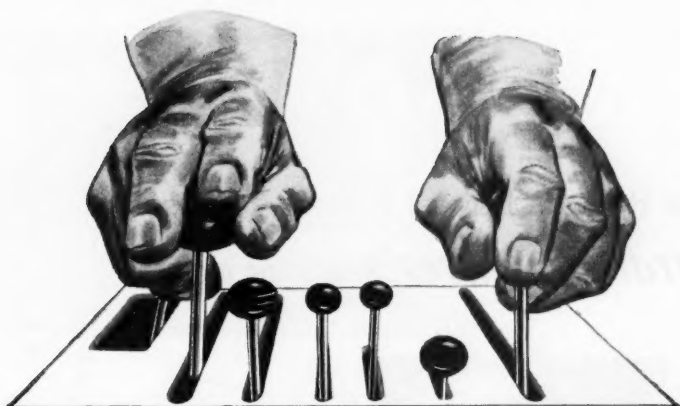
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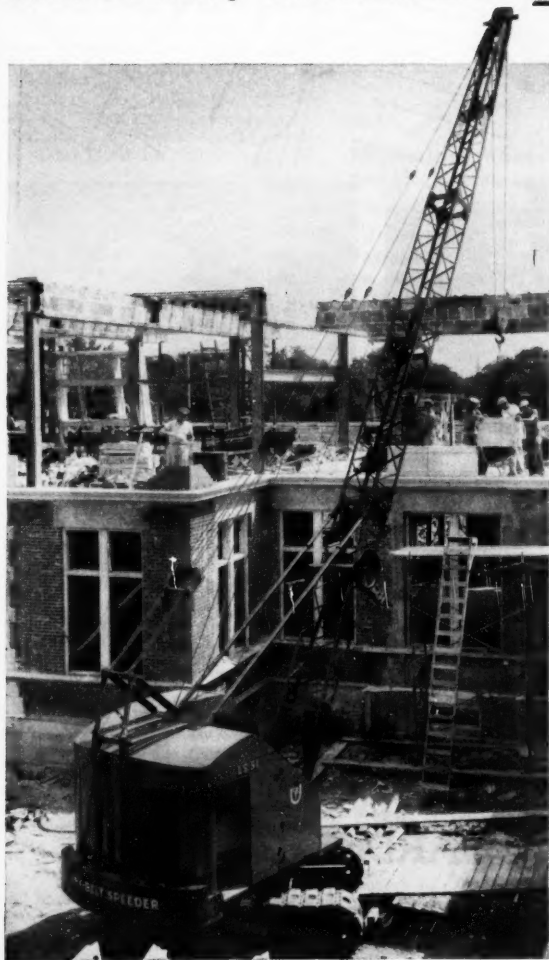
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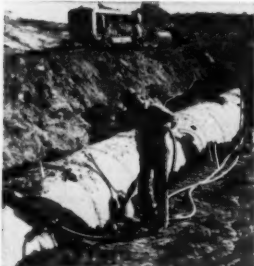
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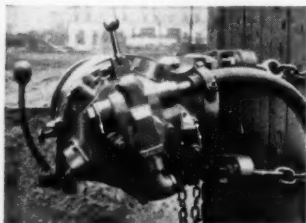
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Above—New officers of the Oklahoma state highway commission are, reading left to right, Louis M. Tittle, chairman; Bob Biles, vice-chairman and Joe V. Curtis, secretary. Mr. Tittle was elevated from the post of vice-chairman and Mr. Biles from the post of secretary. The new chairman and vice-chairman are ranchers. Mr. Curtis is an attorney and banker.

\$1,268,391 Low Bids Made for Oklahoma Road Projects

Low bids received March 6 by the Oklahoma State Highway Commission totaled \$1,268,391 for projects in thirteen counties. The bids follow:

Ellis County—Project No. F-317(6), Pt. 1, U.S. 60, 7,929 miles grading and draining from 13 miles east of Arnett: Honegger Brothers, Kingfisher, \$50,555;

Dewey and Ellis Counties—Project No. F-317(6), Pt. 2, U.S. 60, 5,416 miles grading and drainage east of Arnett: Honegger Brothers, Kingfisher, \$34,890;

Ottawa County—Project No. F-379(1), .158 of a mile grading and two bridges on S.H. 10 at Spring River: M. E. Gillioz, Monett, Mo., \$490,746;

Cleveland County—Project No. FI-380 (2), one bridge and reinforced concrete box on U.S. 77 south of Moore: Duard Pyle, Oklahoma City, \$39,050;

Garvin and McClain Counties—Project No. S-675(3), 7,548 miles PCC paving stabilized aggregate base and rock asphalt surface course on S.H. 19 in Maysville: Smith Brothers, Noble, \$199,389;

Woods and Alfalfa Counties—Project S-676(3), 4,864 miles asphalt stabilized base and single bituminous surface course on S.H. 11: Broce Construction Co., Woodward, \$105,502;

Caddo County—Project No. S-680, 5,991 miles asphalt stabilized base course and single bituminous surface course on S.H. 58: John Erts Construction Co., Oklahoma City, \$104,340;

Alfalfa County—Project No. S-160(5), 3,990 miles grading, drainage, earth placing and traffic bound surface course on county road beginning at S.H. 8 to McWillie: Jones and Phillips Construction Co., El Reno, \$25,520;

Oklfuskee County—Project No. RC-77 (3), repairs to North Canadian River bridge: J. A. Raines, Muskogee, \$9,086;

Blaine and Major Counties—Project No. SAP-93(3), 3,528 miles asphalt stabilized base and single bituminous surface course on S.H. 8 beginning at Okeene: Steinberg Construction Co., Tulsa, \$72,509;

Garvin County—Project No. RC-97(1), repairs to Washita River bridge and approaches on U.S. 77: Frost Construction Co., Hydro, \$14,353;

Muskogee County—Project No. SAP-195(5), 1,801 miles asphalt concrete widening, resurfacing and paving on U.S. 62: Anchor Construction Co., Muskogee, \$122,451.

Mississippi Makes Awards for Highways and Bridges

The Mississippi State Highway Department on March 27 awarded the follow-

ing contracts, including a joint project with the Louisiana Department of Highways for the Pearl River bridge:

Pearl River County and Washington Parish — .334 mile, Pearl River bridge on the Bogalusa-Poplarville Highway, Louisiana State Route 35-Mississippi State Route 26, Gordon Walker, Baton Rouge, La., \$848,831;

Tishomingo and Itawamba Counties—5,927 miles of grading, drainage and culverts on Mississippi Highway No. 25, Alvie Goolsby, Ripley, Miss., \$121,730;

Winston County—5,396 miles of grading, drainage, culverts, bridge and box bridge on Mississippi Highway No. 14, Keaton Construction Co., Little Rock, Ark., \$215,483;

Calhoun County—5,459 miles of grading, drainage, culverts and bridges on Mississippi Highway No. 8, Edward E. Morgan Co., Inc., Jones & Gillis, Inc., Jackson, \$361,549;

Grenada County—16,104 miles of grading, drainage, culverts, box bridge and bridge on Mississippi Highway No. 8, Edward E. Morgan Co., Inc., Jones & Gillis, Inc., Jackson, \$561,469;

Leflore County—Borings for Yazoo River bridge, Southeast Core Drilling Co., Inc., Chattanooga, Tenn., \$4,068;

Washington County—8,033 miles of grading, drainage, culverts, bridge, box bridge, gravel base, double bituminous surface treatment and 8-inch uniform reinforced concrete pavement on U. S. Highway 61, Burdine Construction Co., Greenville, Miss., \$444,343.

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Looking Underneath the Runway, Koppers Creosoted Piles Support This Structure.



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● The creosoted timber trestle, pictured here, connects the mainland with two oil wells in the Nueces Bay area near Corpus Christi, Texas. Such structures must be built quickly, at comparatively low cost, yet must remain sound and serviceable throughout the production life of the oil field.

That's why this 4,000-foot runway was founded on Koppers Pressure-Creosoted Piles. They are quickly available; they are ready to drive when received; they are usually lower in cost than other permanent pile materials. As for permanence, a service life of thirty years is commonplace because Koppers Piles never rust or spall . . . they are protected against decay and marine borers—the greatest threats to long life.

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PRESSURE-TREATED WOOD

Koppers to Build New Texas Plant Near Port Arthur

Koppers Company, Inc., plans multi-million dollar program of expansion for its chemical division which provides for construction of a new plant near Port Arthur, Texas, and additions to its present facilities at Kobuta, Pa.

Gen. Brehon Somervell, Koppers president, said that the company's Board of Directors has authorized new facilities at the two locations. The new plant in Texas will be constructed by Koppers Engineering and Construction Division and work will get under way within a few months.

Dan M. Rugg, vice president and general manager of the Chemical Division revealed that the program will, within a year, make it possible to increase the Division's production of styrene monomer by approximately 33 per cent, and to increase the Division's production of the popular plastic, polystyrene, by approximately 25 per cent. Koppers, at present, is the nation's third largest producer of polystyrene.

Koppers has contracted to purchase approximately 1,000 acres of land, located about 2 miles west of Port Arthur, Texas, Mr. Rugg said. On a portion of this land, Koppers will construct a plant which will take ethylene from the unit which Gulf Oil recently announced it will build at its Port Arthur refinery and combine it with benzene to make ethyl-benzene. Ethyl-benzene is used as an intermediate in making styrene, which, in turn, is basic to making synthetic rubber and polystyrene.

Benzene will be transported to the plant and the finished ethyl-benzene will be transported to Kobuta, Pa.

Mr. Rugg explained that shipping of the ethylene to Kobuta and making ethyl-benzene there was not economically feasible since ethylene would have to be shipped under refrigeration. Ethyl-benzene, however, can be shipped without special equipment.

The new Texas installation will be called the Williams plant in honor of J. P. Williams, Jr., former President and Chairman of Koppers, who now is retired.

Porter Buys Oil Field Supply Stores in Southwest

Fourteen supply stores of International Derrick and Equipment Co., a division of Dresser Industries, Inc., of Dallas, Texas, have been purchased by the H. K. Porter Co., Inc., of Pittsburgh.

The Porter Company now operates 11 stores in its Jarecki International in Texas and Oklahoma. Addition of the International Derrick and Equipment supply stores will bring the total to 25 and extend coverage into Louisiana, Kansas, and New Mexico.

The supply stores will be operated as the Jarecki International Supply division of H. K. Porter Co., Inc. They will continue to sell and service the oil field products manufactured by International Derrick and Equipment Co. and its parent, Dresser Industries, Inc., says T. M. Evans, Porter president.



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Look around you—this old world is rapidly turning into one of concrete. And you'll be needing a good cement for your own concrete construction.

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Plymouth Cordage Company Pouring Plant Foundations

E. G. Ludwig, contractor for the new Plymouth Cordage plant at New Orleans, has poured the concrete for the foundations on the twenty-one and one-half-acre site at Jefferson Highway and Ponchartrain Avenue.

Located near the Mississippi River bridge, the building will contain 155,000 square feet of space and will produce manila, sisal and hennequen cordage, including binder and baler twine and rope for marine and fishing use.

Sprinkler system for the plant has been let to the Grinnell Co. Equipment purchased includes Cleaver-Brooks high-pressure boilers; Carrier air-conditioning unit; Mueller hot water boiler; Rudd hot water heaters; Acme Industries cooling tower.

Cary B. Gamble and Associates of New Orleans are the engineers for the project, which when completed will employ about 125 workers. It will serve all the Southern states and a substantial part of the Mid-Continent area and the North Central states.

A. P. Loring, Jr., is chairman of the board of the Plymouth Cordage Co., with home office at Plymouth, Mass. Ellis W. Brewster is president and treasurer; Charles MacKinnon and Edwin G. Roose, vice presidents, and F. W. Travers, New Orleans, manager.

\$848,831 Bid Opened for Pearl River Bridge

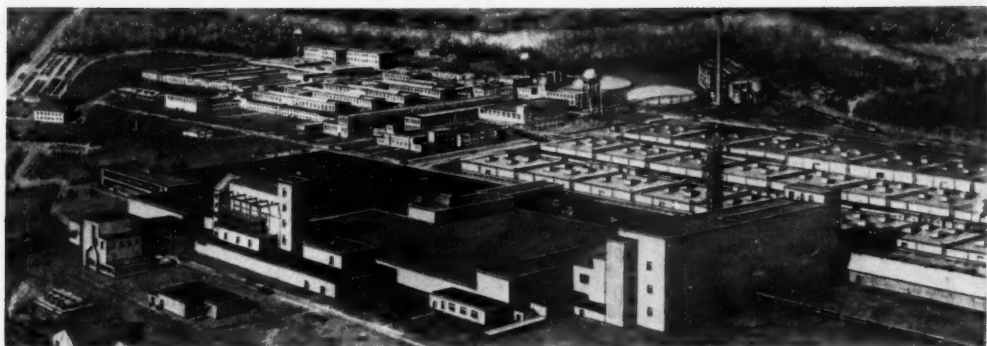
Three bids opened March 27 by the Louisiana Department of Highways for the bridge across the Pearl River on the Bogalusa-Poplarville highway ranged from \$848,831.61 to \$936,460.55. The low proposal was submitted by Gordon Walker of Baton Rouge. The bridge will be .334 mile in length and have thirty-three 40-foot I-beam spans, one 75-foot I-beam span, one 240-foot swing span, one 80-foot I-beam span and one 20-foot I-beam span, as well as a Portland cement concrete approach. It is located on State Route 26 and connects Washington Parish, Louisiana, and Pearl River County, Mississippi.

New Iberia Hotel Being Modernized

Hotel Frederick, at New Iberia, La., is modernizing the entire old section of its building and has erected an addition containing thirty-six air-conditioned rooms. The project, which is now almost finished, includes a new heating plant, new roof, sprinkler system, new elevation and complete reconstruction of twelve rooms in the old building. O. J. Southwell is the architect. General contractor is Milton Herpeche. Both are of New Iberia.

Statler Plans Hotel on Dallas Site

Hotels Statler Co., Inc., has acquired a site at Dallas where a 700-room hotel is to be erected. Plans are now being drawn, but no other information is available. The project is reported to involve expenditure of \$10,000,000.



Above—Cellophane plant being built at Pisgah Forest, N. C., by Olin Industries, Inc. The 300 by 900-foot building is shown in the foreground. An affiliate of Ecusta Paper Co., cigarette paper makers, Olin has been licensed to make cellophane by E. I. du Pont de Nemours & Co. The plant is scheduled to go into production in September.

South's Contract Value at Peak in First Quarter

SOUTHERN construction in the first quarter of this year is at the all-time record of \$2,301,493,000, or more than three times the figure for the comparable period of last year.

Industrial projects valued at \$1,542,016,000 were the heaviest factor in the precipitous ascent and amounted to over two-thirds of the three-month aggregate.

Completing the peak figure were \$277,562,000 for private building, \$217,627,000 for public building, \$134,963,000 for heavy or engineering projects and \$129,325,000 for highways and bridges.

Private building represented a small increase of six per cent above its comparable three-month figure of last year. Two of its elements were up; two down.

Despite federal financial restrictions, private residential building with its \$216,555,000 total, rose eight per cent. Office building, total \$19,638,000 for the three

months, was also up. The increase amounted to forty per cent.

The balance of the private construction field declined. This involved most of the types of work on which outright construction curbs have been applied by the National Production Authority.

Assembly buildings, which embrace churches in addition to theatres, auditoriums and fraternal buildings, totaled \$20,859,000 in the first quarter, a drop of sixteen per cent. Shrinkage in commercial building was about seven per cent. The total was \$20,510,000.

The \$217,627,000 public building figure was seventy-five per cent larger in the first three months than it was in the initial quarter of last year. Both schools and other public building showed substantial rises.

Public buildings, including hospitals and federal, state and county structures were

valued at \$177,775,000. This is almost two and one-half times the value of such work in the same period of 1950. The current total for school projects is \$99,852,000, or a rise of thirty per cent.

Public heavy and engineering construction amounted to \$264,288,000, this including \$129,325,000 for highways and bridges and \$134,963,000 for other types of heavy work.

The \$134,963,000 represented a rise of thirty per cent and includes \$81,754,000 for dams, drainage, earthwork and airports, \$41,683,000 for sewer and water work and \$11,526,000 for government electric projects.

The dam-drainage-earthwork-airport category shows an increase of over twenty-one per cent. Sewer and water work is stronger by seventy-one per cent. Government electric projects have slowed.

Highway and bridge construction so far this year is about ten per cent below the \$144,763,000 registered in the similar period of 1950. However, the current figure is more than forty-two per cent higher than the average for the first quarters of the last five years.

The highway picture was outlined in a recent talk by the president of the American Road Builders Association. In 1945, he pointed out, the country had only 30,000,000 motor vehicles registered. Now, there are 48,500,000. Present costs mean expenditure of \$200,000 or better for a mile of highway; ten years ago, what was then considered a modern road cost as little as \$50,000 a mile.

March awards for southern construction were valued at \$577,160,000, this representing the substantial increase of two hundred fifty-eight per cent when compared with the same month of 1950. The figure, however, is a ten per cent drop from the preceding month.

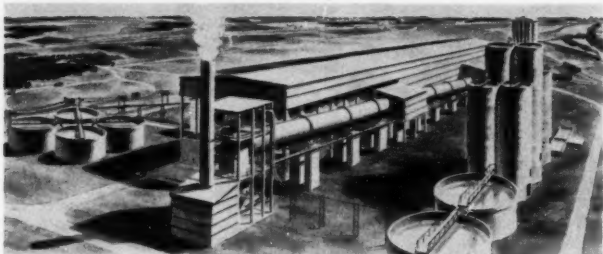
The March total is made up of \$344,013,000 for industrial construction, \$80,272,000 for public building, \$56,114,000 for private building, \$49,511,000 for heavy en-

(Continued on page 16)

SOUTH'S CONSTRUCTION BY TYPES

	March, 1951 Contracts Awarded	March, 1951 Contracts to be Awarded	Contracts Awarded First Three Months 1951	Contracts Awarded First Three Months 1950
PRIVATE BUILDING				
Assembly (Churches, Theatres, Auditoriums, Fraternal)	\$7,057,000	\$11,977,000	\$20,859,000	\$24,834,000
Commercial (Stores, Restaurants, Filling Stations, Garages)	2,709,000	5,487,000	20,510,000	22,094,000
Residential (Apartments, Hotels, Dwellings)	45,949,000	92,835,000	216,555,000	206,492,000
Office	399,000	210,000	19,638,000	14,917,000
	\$56,114,000	\$110,509,000	\$277,562,000	\$261,437,000
INDUSTRIAL	344,013,000	\$307,418,000	\$1,542,016,000	\$85,659,000
PUBLIC BUILDING				
City, County, State, Federal and Hospitals	\$18,386,000	\$19,455,000	\$117,775,000	\$47,636,000
Schools	31,886,000	36,108,000	99,852,000	76,557,000
	\$80,272,000	\$85,563,000	\$217,627,000	\$124,193,000
ENGINEERING				
Dams, Drainage, Earthwork, Air- ports	\$29,210,000	\$79,131,000	\$81,754,000	\$67,203,000
Federal, County, Municipal Elec- tric	3,211,000	76,975,000	11,526,000	11,710,000
Sewers and Waterworks	17,090,000	22,659,000	41,683,000	24,368,000
	\$49,511,000	\$177,865,000	\$134,963,000	\$103,281,000
ROADS, STREETS, BRIDGES ...	\$47,250,000	\$36,766,000	\$129,325,000	\$144,763,000
TOTAL	\$577,160,000	\$718,121,000	\$2,301,493,000	\$719,333,000

South's Contract Value at Peak in First Quarter



Above—Artist's conception of new 1,000,000-barrel-a-year plant being constructed at Brandon, Miss. by Marquette Cement Manufacturing Co.

(Continued from page 15)

gineering construction, and \$47,250,000 for highways and bridges. This latter represented an increase; the others all showed drops.

While the industrial construction total was a slight decline—eight per cent—it was a continuation of the large volume which has prevailed in the previous three months. The peak of the period occurred in January, when an \$820,619,000 total was recorded. In February, the value dropped to \$377,384,000.

Public building occupied second place in value in the March total. Included were \$48,386,000 for government buildings and hospitals and \$31,886,000 for schools. These represented an increase of fourteen per cent and a decrease of eighteen per cent, respectively, from levels of the preceding month.

The March private building total is thirteen per cent below the comparable month of last year and twenty-seven per cent under the month immediately preceding in the current year.

Residential construction apparently is feeling the effects of the financial restrictions. The \$45,949,000 value for March is down about five per cent from the total for the preceding month, which in turn dropped from the \$144,671,000 value for residential work in January.

Assembly building, including churches,

theatres and auditoriums, moved upward twenty-seven per cent, compared with the value of such work in February. Commercial building dropped by twenty-three per cent. Office building was practically at zero.

Among the expansions in the news last month were the \$55,000,000 Bauxite, Ark. and \$15,000,000 Port Lavaca, Texas projects of Aluminum Company; \$12,000,000 Western Maryland Railway pier at Baltimore; \$11,000,000 Lehigh cement plant at Jacksonville; \$10,000,000 Westinghouse plant near Annapolis, Md.; Mathieson Chemical's \$5,000,000 McIntosh, Ala. project; \$4,000,000 project for Harbison-Walker Refractories at Fairfield, Ala.

Also, the \$4,000,000 Union Bag and Paper expansion at Savannah, Ga.; \$3,600,000 Woodward Iron project at Woodward, Ala.; \$3,000,000 Berkshire hosiery mill at Andrews, S. C.; \$2,000,000 projects at Baltimore for General Refractories, at Danville, Ky. for Corning Glass and at Kansas City for Union Wire Rope Co.; \$1,708,000 Red Star Yeast plant at Belle Chasse, La. and \$1,000,000 Armstrong Cork project at Pensacola, Fla.

Some idea of the effect of National Production Authority curbs on building may be seen from a review of the action taken in the two-week period from March 9 through March 22. Fifty-seven applications for projects with a total estimated cost of \$2,231,438 were issued for the four-

state area of Virginia, West Virginia, North Carolina and Maryland.

During that time 152 applications were filed under Order M-4 controlling materials for building purposes. Eighty-one were already pending. Thirty-six pleas for permission to begin work were turned down as of no aid to "the defense program and denial is not unreasonable hardship on the applicant."

For the full period since the National Production Order was issued, there have been 347 applications filed in that four-state territory. Of these, 169 have been approved, 69 have been denied, 20 have been sent to Washington and 14 were not required. Still pending are 105 applications. Those approved involved \$4,033,471.

Of the 57 approved in the March 9-March 22 period, 26 were in Virginia and totaled \$797,075; 14 were in North Carolina, total \$910,309; 11 were in Maryland, total \$305,223 and six in West Virginia with a value of \$218,831.

Heavy engineering type construction, which in March was seventeen per cent below the level of the preceding month, embraced \$29,210,000 for dams, drainage, earthwork and airports, \$17,090,000 for sewers and water work and \$3,211,000 for government electric projects.

Two of the categories were up when compared with February levels. These were the sewer and water work, where the increase was thirty-seven per cent, and the government rural electric projects with its thirty-two per cent rise. The \$29,210,000 for dams and similar work represented a drop of thirty-four per cent.

The \$47,250,000 for highways and bridges in March was up when compared with both the same month of last year and the preceding month. The increase over March of 1950 was thirty-one per cent; over February of 1951, about one and one-half per cent.

Construction put in place during March according to available Commerce and Labor department figures, is estimated at nearly \$2,100,000,000, or about twenty-one per cent more than the value set in the comparable month of last year.

Construction in the first quarter of this year was reported as the largest on record by the Building Materials division of the Department of Commerce and the Bureau of Labor Statistics of the Labor Department.

The summary issued by those two federal agencies placed the value of new construction in the three-month period at \$6,100,000,000, or twenty-one per cent above the total for the first three months of last year.

Uncertainty exists about the ultimate total volume of construction expected this year. The Associated General Contractors of America says that as contractors complete work on existing contracts, there appears to be lively competition for the smaller number of projects now coming on the market.

However, there is now active and will soon be placed on the market a number

Below—Research building erected at Baytown, Texas by Humble Oil Company.



Roadbuilders Hold Forty-Eighth Annual Meeting

American Road Builders' Association last month held its forty-eighth annual meeting, elected officers and directors, passed resolutions on various highway matters and heard authorities discuss subjects ranging from freedom to research, in addition to the many problems confronting their industry.

Elected president was Paul B. Reinhold of Pittsburgh, who succeeds Col. Enoch R. Needles, of New York. District vice presidents to serve with Mr. Reinhold are Charles M. Smith, of Pensacola, Fla., southern area; Charles M. Noble, of Trenton, N. J., northeastern area; W. A. Roberts, president of Allis-Chalmers Manufacturing Co., of Milwaukee, Wisc., central area; and A. Diefendorf, of Salt Lake City, Utah, western area. Jennings Randolph, of Washington, was renamed treasurer.

The seven directors elected included J. N. Robertson, of Washington, D. C.; Raleigh W. Gamble, of Milwaukee; Otto S. Hess, of Grand Rapids, Mich.; Howard L. Way, of San Bernardino, Calif.; Murray D. Shaffer, of Springfield, Ohio. Mr. Shaffer is general sales manager of the Buffalo-Springfield Roller Co.

Contractors Division

President of the contractors' division is Joseph D. Bonness, of Milwaukee; vice president, S. Howard Brown, of Lebanon, Pa. Directors of this division include the following from the South: Leo Vecellio, of Beckley, W. Va.; Archer B. Gay, of Richmond, Va.; Robert Austin, of Charlotte, N. C.; E. N. Rodgers, of Montgomery, Ala.; Wyatt B. Hodges, of Fort Lauderdale, Fla.; E. H. Hines, of Greenwood, S. C.; H. C. Hoffheimer II, of Norfolk, Va.; J. B. Michael, of Memphis, Tenn.; and Herbert M. Warren, of Birmingham, Ala.

A. J. Thelen, of Madison, Wisc., was elected president of the county and local roads division. The southern district vice president for the division is T. H. Edwards, of Montgomery, Ala. Among the directors were Arthur W. Tayman, of Chevery, Md.; J. C. Akers, of Nashville, Tenn., and W. H. Johnston, of Palmetto, Ga.

Warren A. Coolidge, of Nashville, heads the municipal division. H. F. Clemmer, of Washington, D. C., and A. G. Wyler, of New Orleans, are two of the district vice presidents elected with Mr. Coolidge. Walter G. Daniel, of Jacksonville, Fla., was among the new directors.

Manufacturers Association

The Construction Industry Manufacturers Association, an affiliated organization, also elected officers. These were: President, Julien R. Steelman, vice president of Koehring Co., Milwaukee; First Vice President, H. T. Reishus, general manager of the industrial division of International Harvester Co., Melrose Park, Ill.; Second Vice President, C. F. Boyd, vice president of Gallon Iron Works & Manufacturing Co., Gallon, Ohio; Secretary-Treasurer, R. E. McCluskey, vice

Elect New Officers, Pass Resolutions, Discuss Problems

president of R. G. LeTourneau, Inc., Peoria, Ill. Harold F. Hess, Chicago, was named executive vice president.

Directors of the Construction Industry Manufacturers Association elected for three-year terms included: Joseph F. Heil, president of Heil Co., Milwaukee; C. J. Haring, general sales manager, J. D. Adams Manufacturing Co., Indianapolis; O. J. Neslage, vice president, Joy Manufacturing Co., Pittsburgh; L. G. Schraub, vice president, Union Wire Rope Corp., Kansas City; E. Scranton Gillette, publisher, and Mr. Reishus and Mr. McCluskey.

Resolutions Passed

Resolutions presented at the concluding session of the Boston meeting endorsed pending legislation to increase the work week during the current emergency; urged a stand of the essentiality of highways with appropriate priority assistance for their construction; offered the services of the Roadbuilders' Association in civil defense.

A resolution also petitioned Congress to make the necessary appropriations to continue federal aid airport work at its authorized level. The national legislators were also asked to allow federal government to reimburse local agencies for damage done to roads by the military forces. A balanced highway construction program was also recommended.

Colonel Needles Reports

In his presidential report, Colonel Needles said the last two years of the Association have seen notable changes. The A. R. B. A., "is now fundamentally stronger than at any time in its previous half-century of growth and activity," he declared. "We have been tried by fire and we have endured. We will continue to grow and serve, for the principles on which our Association is founded are worth and sound.

"With an assured minimum income on which we can operate, we now know how to plan ahead. With a record of accomplishment and a future program to serve our nation, we have been able to solidify our membership, to clarify our position and thus to merit the securing of new members and new support. This new membership program is in progress and is promising. Our Association is now ready and able really to serve our country as never before, no matter how tough the fight may become."

Telling the highway story to the public has not been a very good job, he observed, and as he sees the situation "The A. R. B. A., representing as it does a cross-section of the entire highway industry and profession, must take the lead in coordinating the efforts of other fields

having a substantial stake in adequate highways and, by emphasizing the similarities, rather than any disparities in the various points of view, focus the public attention on the need for more and better highways."

Intelligent federal leadership for "defense measures that will not permit highway transportation to deteriorate in any degree" was called for by Senator Dennis Chavez, chairman of the Senate Committee on Public Works, who described the main highways as "the assembly lines of a large portion of our defense plants.

"Raw materials move over the highways to plants. Parts for weapons and machines move from one plant to another for processing. Plants assembling airplanes, tanks, trucks and electronic devices receive a daily flow of parts from a great number of smaller plants making parts. The highways are links in the assembly line that extend for hundreds of miles. Speedy conversion from raw material to finished product would not be possible without these links."

Lt. Gen. Eugene Reybold, former chief of the Army's Corps of Engineers, and executive vice president of the Road Builders organization, also emphasized the importance of the nation's highways in these uncertain times. "If our roads and streets are to shoulder arms properly for the current military-industrial expansion," he stated, "an adequate construction and reconstruction program must be continued," continuing "it is unbusinesslike and unrealistic to ignore the fact that our vast highway network is an integral part of our nation's assembly lines, in war or in peace."

The Corps of Engineers and other branches of the military organization were well represented. Appearing before the meeting were Lt. Col. David G. Hammond, chief of the engineer research and development division, Fort Belvoir, Va.; Lt. Col. C. C. Albaugh, of the military planning and intelligence division, Office of the Chief of Transportation, and D. C. Chace, highway engineer, also of that office.

Military Equipment Needs

Colonel Hammond talked on recent developments in military equipment for highway and airport construction. He traced the development of construction equipment and told of the lessons learned in World War II, stressing airborne equipment and the need for increased capacity, mobility, maneuverability, simplified maintenance, cost of operation and multi-utility.

Among the needs at present is a heavy duty rubber-tired tractor dozer and prime mover for construction equipment. He described it as from 30,000 to 35,000 pounds draw-bar pull, capable of a degree of dozer operation and for use as a tow tractor for scrapers, dump trailers, compaction equipment, machinery trailers.

New drive trains are under consideration. Torque converters have proven themselves and new combinations of elec-

(Continued on page 18)

Roadbuilders Hold Forty-Eighth Annual Meeting

(Continued from page 17)

tric and hydraulic controls appear to have merit, he observed. Additional proposed studies include further development of airborne equipment in the 16,000-pound class, and equipment for amphibious and arctic operations.

Colonel Albaugh said the Department of Defense believes that "all highway construction not essential to the effective prosecution of a war should be discontinued during a period of emergency," and that to keep the need for critical materials and manpower at a minimum the principal streets and highways in urban areas, the national system of interstate highways and other strategic routes should be maintained at high level during peacetime.

Mr. Chacey emphasized two points: That highways and the vehicles that use them during their expected life must be considered in relation to each other if they are to serve the national defense effort, and that the use of critical materials and manpower to make improvements which in a few years will be obsolete "is not in the best interest of national defense." Maintenance and repair of all highways is more significant now than ever before, he said.

Accelerated Program Urged

Gen. James A. Anderson, chairman of the Virginia State Department of Highways and newly-elected president of the American Association of State Highway Officials, advocated acceleration of road building during the national emergency, urging recognition of the essential role of highways to avert repetition of the World War II concept that "highways are expendable."

The evolution and rapid growth of the country's main highways he declared, have been inevitable. Main highways must be rebuilt to take care of the traffic foreseen for 1970 and 1980. It is necessary to have reasonable passable year-round road to all reasonably located farms and rural dwellings.

The Virginia Highway Commission chairman likened "our overall highway system to a great river system. The branches and brooks, the creeks and smaller rivers are all a part of the river system. It is important that the main river and all its tributaries be kept open and functioning. Floods and jams on the tributaries are bad, but floods and jams on the main stream are disastrous."

Informing the Public

James R. Law, chairman of the Wisconsin State Highway Commission, spoke on "enlisting public support for highway programs." "An informed public," he stated, "will lend its backing almost unanimously in support of highway programs, but the difficulty lies in getting the information out so that it reaches the public. The motorist is torn between two arguments. The petroleum industries, the American Automobile Association and the National Highway Users Conference

tell him he is paying far too high a motor fuel tax.

"The state highways departments and the Bureau of Public Roads have far less fanfare to get his attention, but if he reads their arguments at all he is rightfully told that our road system is deteriorating faster than the funds for its needs can accumulate. Good roads organizations need to tell him which set of figures to believe."

Road Importance Cited

Some federal and state officials and a segment of the general public do not understand how vital highway transportation is to national defense and the civilian economy, according to A. C. Clark, deputy commissioner, construction and maintenance division of the Bureau of Public Roads, and "neither do they know how ill-prepared our highways are to measure up to the burdens which will undoubtedly be placed upon them."

Expressing the belief that the highway needs are recognized by officials responsible for setting the objectives for the defense program, Mr. Clark said this belief "does not imply that we as road builders can now sit back and competently expect our highways will be taken care of as a routine matter."

Many obstacles must be overcome and problems solved, especially in civilian fields and "Roadbuilders—engineers, contractors and manufacturers—must face the issues squarely and work cooperatively to the end that our highways will continue to fulfill their significant role in the defense effort and maintenance of our civilian economy."

The speaker said wasteful maintenance of highways which have outlived their usefulness instead of rebuilding them as like a severely injured patient resorting to pain-killing drugs instead of undergoing the necessary surgery.

Airport Routes Advocated

Walter R. Macatee, highway transportation specialist of the Civil Aeronautics Administration, advocated city-to-airport expressways to effectuate time savings estimated at 35 per cent below current time requirements and to facilitate evacuation of wounded from metropolitan centers in case of enemy attack.

Pavements do not fail suddenly, but failures develop as the result of usage and time, said Henry Aaron, chief of the paving and soils branch of the Civil Aeronautics Administration. He stressed the need for intensive study of all factors of a controversy, which have "led to conflicting conclusions that serve only to confuse the situation." There is no reason, he pointed out, "why any pavement should not be able to handle occasional aircraft considerably heavier than that for which it was designed, although a distinction must be made between a pavement that is safe for emergency landing or an occasional operation and the pavement required to withstand capacity operations without excessive maintenance."

Fred Burrgraf, associate director of the Highway Research Council, in a discussion of the research project at LaPlata, Md., showed that weight increases of 40 per cent in truck loading—from 32,000 to 44,800 pounds—caused approximately 11 times as much cracking in concrete pavement. In tests of lighter loads, trucks loaded at 22,400 pounds caused six times as much cracking as the 18,000-pound loads.

How state highway departments are using aerial photography in highway location was described by R. Getty Browning, chief locating engineer of the North Carolina State Highway and Public Works Commission. He detailed the procedure followed and said "we find the actual running of the center line is quite a simple matter after having the final projection adjusted."

Describes Jersey Turnpike

Charles M. Noble, chief engineer of the New Jersey Turnpike Authority, talked on the 118-mile turnpike under construction in his state. Design speed of the southerly 87-mile section is 75 miles an hour; of the northerly 30-mile stretch, 70 miles, except in certain difficult parts where a 6-mile figure is to prevail.

His authority had awarded more than seventy construction contracts by mid-March. These totaled more than \$170,000,000. The program for 1951 contemplates expenditures, or contractors' earnings, of about \$146,000,000 less the value of certain work which may be carried into 1952.

Average Wage Rates Listed on Federal Road Projects

The spread between hourly wage rates of executive, administrative and supervisory personnel and unskilled labor on federal aid highway projects is eighty-six cents, according to the Bureau of Public Roads, which reveals that the average figures paid the executive and supervisory workers for the entire country is \$2.16; skilled labor, \$2.09; intermediate grade, \$1.60; and unskilled workers, \$1.30.

Average hourly rates, listed by geographical divisions, for executive administrative and supervisory; skilled; intermediate grade; and unskilled workers, for the first quarter of 1951, were:

New England, \$2.19, \$2.20, \$1.67, and \$1.51; Middle Atlantic, \$2.38, \$2.63, \$2.01, and \$1.63; East North Central, \$2.25, \$2.36, \$1.69, and \$1.56; West North Central, \$1.95, \$1.84, \$1.34, and \$1.21;

South Atlantic, \$1.67, \$1.48, \$1.08, and \$.87; East South Central, \$1.90, \$1.71, \$1.16, and \$.86; West South Central, \$1.77, \$1.71, \$1.23, and \$1.39; Mountain, \$2.31, \$2.28, \$1.68, and \$1.39; Pacific, \$2.74, \$2.32, \$1.90, and \$1.72.

Clark Company Erecting Clarksville Housing

Clark Construction Co., Owensboro, Ky., contractor for the \$1,741,203 housing projects at Clarksville, Tenn., has finished the concrete foundations and is now laying brick. Speight & Hibbs, of Clarksville, are the architects.



A 4-71 GM Diesel engine drives two 10' x 20' crushers, 70' x 24' conveyor and 3' x 10' double deck screen. This plant has enabled Sequatchie County—one of the smallest in Tennessee—to have one of the best county road systems in the state.

35 Tons an Hour

-fuel cost 1-2/3¢ per Ton

WHEN a GM 4-cylinder Diesel replaced another make engine on this rock crushing plant operated by Sequatchie County, Tennessee, the surplus power enabled Road Superintendent Chester Allen to add a *second* crusher.

In this unique installation, with one engine driving the entire plant, production has doubled to 35 tons per hour. Fuel cost is less than 1 2/3 cents per ton produced. No repairs in over a year of operation.

Reasons for this superior performance are clear. GM Diesel engines are 2-cycle—with power on every downstroke. They deliver a smooth, steady

power output—twice as many power impulses for each revolution of the crankshaft. This makes GM Diesels far more powerful than other Diesels of comparable size. These engines start quickly on their own fuel, accelerate faster and keep running with little attention.

For dependable, low-cost Diesel power, get the facts on these husky, hard-working 2-cycle Diesels. They are offered as standard or optional equipment in over 500 kinds of power machinery by 120 different manufacturers. They are available for replacement installations through your nearby GM Diesel distributor.

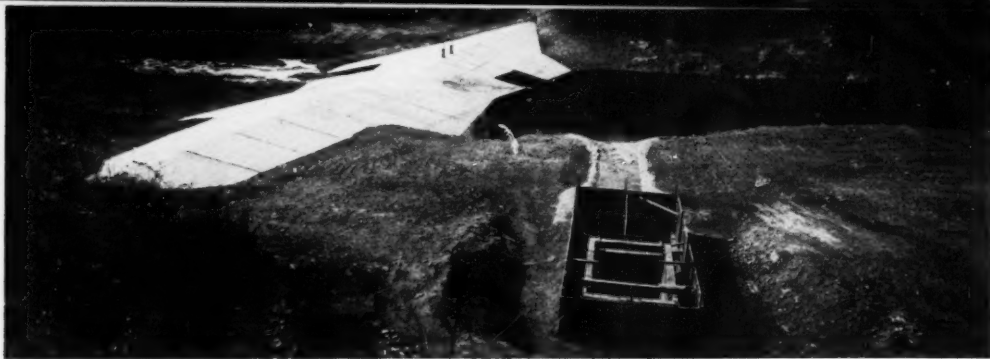
DETROIT DIESEL ENGINE DIVISION

SINGLE ENGINES...Up to 275 H. P. **DETROIT 28, MICHIGAN** MULTIPLE UNITS...Up to 800 H. P.

GENERAL MOTORS

DIESEL BRAVN WITHOUT THE BULK





Above—Diversion dam, 225 feet long and 18 feet high, built across the Patapsco River to shunt water into the new 16.8-mile tunnel connecting with the Baltimore filtration plant at Montebello.

Baltimore Finishes 16.8-Mile Tunnel, and Prepares to Build Big Dam

BALTIMOREANS soon will be drinking a mixture of the flow from two Maryland streams—the Gunpowder, where the city already has two storage dams, and the Patapsco, where a diversion dam just finished will shunt water into a new tunnel that will carry it almost seventeen miles to the local filtration plant.

The dam is the only permanent outward evidence of the three years of around-the-clock operations by Samuel R. Rosoff, Ltd., tunneling specialists who held three contracts totaling \$21,720,977. It is a 225-foot-long barrier built of spoil mucked from the subterranean route, puddled with water and paved with twelve inches of concrete. Its core is a 30-inch-thick concrete wall; its perimeter is anchored to rock by other concrete.

The dam is only eighteen feet above the stream bed at its highest point. Its crest drops V-like three feet to the middle, a feature designed to guide the overflow. For diversion only, the low dam eventually will be inundated by a lake backed up by a much larger structure soon to be placed under contract.

Liberty dam, as the second barrier to impound 43,000,000,000 gallons will be known, will be a straight gravity type structure. Height of its spillway crest will be 160 feet; its length, 480 feet. Abutments will extend it at each end 92 and 132 feet, respectively. Approximately 170,000 cubic yards of concrete will be

required in construction.

Cost of the proposed impounding dam is placed between \$4,000,000 and \$5,000,000. An additional expenditure of around \$4,000,000 is to be made for road relocations and six new bridges varying from 200 to 2,000 feet in length. The reservoir area is now being cleared by Baltimore's Bureau of Water Supply and the timber salvaged for municipal use. Pulp wood is being sold.

The most substantial part of the biggest single construction project in the current Baltimore municipal program is not visible above ground. Below, at depths ranging from fourteen to 345 feet, this is 16.8 miles or 88,777 feet of tunnel, of which 66,882 feet is of 10-foot diameter; the balance, of seven-foot diameter.

Some idea of the immensity of the project might be gained from the large amount of rock excavated and the quantity of concrete which partly replaced the underground passage. The excavated rock from the tunnel and shafts would cover a city block 400 square to a depth of 73.5 feet. Concrete used to line the tunnel would cover the same area to a depth of 33.3 feet.

The tunnel was bored under two contracts, one for \$9,137,200 and the other for \$9,717,777. Both were held by the Rosoff firm. Cost per linear foot of finished 10-foot tunnel under the first contract was \$200; of seven-foot tunnel with

4.5 inch thick pipe, \$260; of seven-foot tunnel with 8-inch thick pipe, \$297.

Second section costs per linear foot were \$155 for unlined 11-foot tunnel and \$240 for finished 10-foot tunnel. The original plan for using 41,000 feet of the second section unlined was changed when geologists inspected the tunnel and found several stretches where possible cave-ins might occur. The concreting was done at a cost of \$29.20 per cubic yard in place under a \$2,866,000 contract also awarded Samuel R. Rosoff, Ltd.

The part of the tunnel between Druid shaft and the Montebello filtration plant was lined with concrete pressure pipe made on the surface by the Lock Joint Pipe Co. at its Forty-first Street plant. A concrete base was poured, the pre-cast pipe transported on dollies over the re-laid rails of the underground transportation system, and set in place on concrete blocks. The pre-cast concrete pressure pipe was made with a steel cylinder and was both four and one-half and eight inches thick.

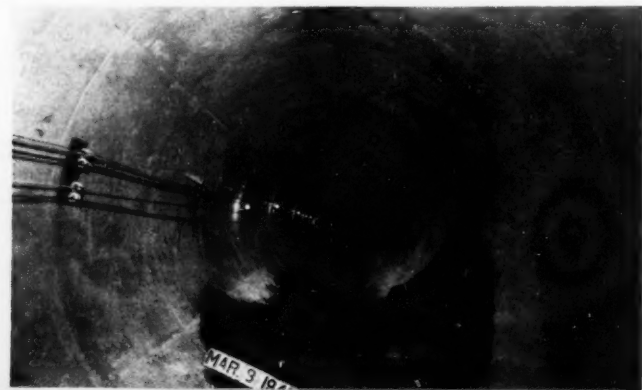
Four journal jacks were used in combination with two steel belly bands to cradle the pipe into shifted position. Pressure was applied at the near end with a block and tackle rig attached several sections back to pull the pipe into final position. Upon setting about seven sections, the contractors then pneumatically placed 2,500-pound concrete into the space between the pipe and rock wall of the tunnel.

Balance of the tunnel was lined monolithically by the form method. Upon completion of excavation, a concrete sub-base was poured six inches below finished grade. The 24-inch gauge rails were re-laid as in the pipe section. After a thorough cleaning, the forms were set. These were in two parts—an invert and arch. The arch was hinged at two points. They were made in five-foot sections and bolted into 20-foot lengths for more efficient handling.

When the concrete had set, the forms were dismantled, collapsed inwardly and placed on the traveler or jumbo to be telescoped, so to speak, through the assembled form and re-assembled at its end where it was attached and the concreting cycle begun again. This allowed both the form setting and concreting to proceed simultaneously.

A Pumpcrete machine, product of the Chain Belt Co., was used in placing the concrete in the monolithic section by what is called the continuous advancing

Below—Of the 16.8 miles or 88,777 feet of tunnel, 66,881 feet is of 10-foot diameter; the balance, of seven-foot diameter. The stretch shown is in the 10-foot section.



slope method. The 3,000-pound concrete was brought from the Woodberry plant of Arundel-Brooks Corp. The trucks dumped directly into drop pipes, which in several instances were more than 300 feet long. Four-yard Jaeger agitators mounted on narrow gauge flatcars received the concrete from hoppers at the bottom of the pipe. Tunnel locomotives pushed the agitators to a discharge conveyor which in turn fed the concreting machines.

The pump machine then forced the concrete through the eight-inch "shooting pipe" to the point of discharge. A nozzle man continuously watched through trapdoor in the top of the arch form and signaled the operator to shift the pipe from one side to the other to insure a full circle pour. Similar doors, or windows, were installed in alternate sides of the steel forms for the same purpose.

Two plans were used for the concreting operations. Under one, the midnight shift cleaned up, set the reinforcing steel and set the forms. The day shift poured the concrete and moved the forms, with the evening shift pouring concrete, setting reinforcing steel and forms and building a bulkhead.

While using this plan, which was for the 10-foot section of No. 1 tunnel, the average progress for the 24 hours was 118 feet and 256 cubic yards of concrete. Maximum for the arch alone was 205 feet and 456 cubic yards.

Average for the No. 2 tunnel, after the cycle was changed so that the operations proceeded on the three shifts, was 137 feet and 285 cubic yards of concrete.

Average for the No. 3 contract was 198 feet and 330 cubic yards of concrete. The maximum for the arch alone was 455 feet and 680 cubic yards of concrete.

The seven-foot lining was done six days a week, working from two headings toward a shaft in the center. While one crew on the 12 to 8 shift was setting pipe, another was cleaning up at the opposite heading; on the 8 to 4 shift, the concrete backing was poured at one heading and pipe set at the other. The 4 to 12 crews cleaned up and poured concrete, thus repeating the cycle. Average progress was 93 feet of pipe a day, with a maximum of 156 feet. Concrete backing around the concrete pipe was placed by a pneumatic placer made by Pressed and Welded Products Co. This was also done on the advancing slope plan.

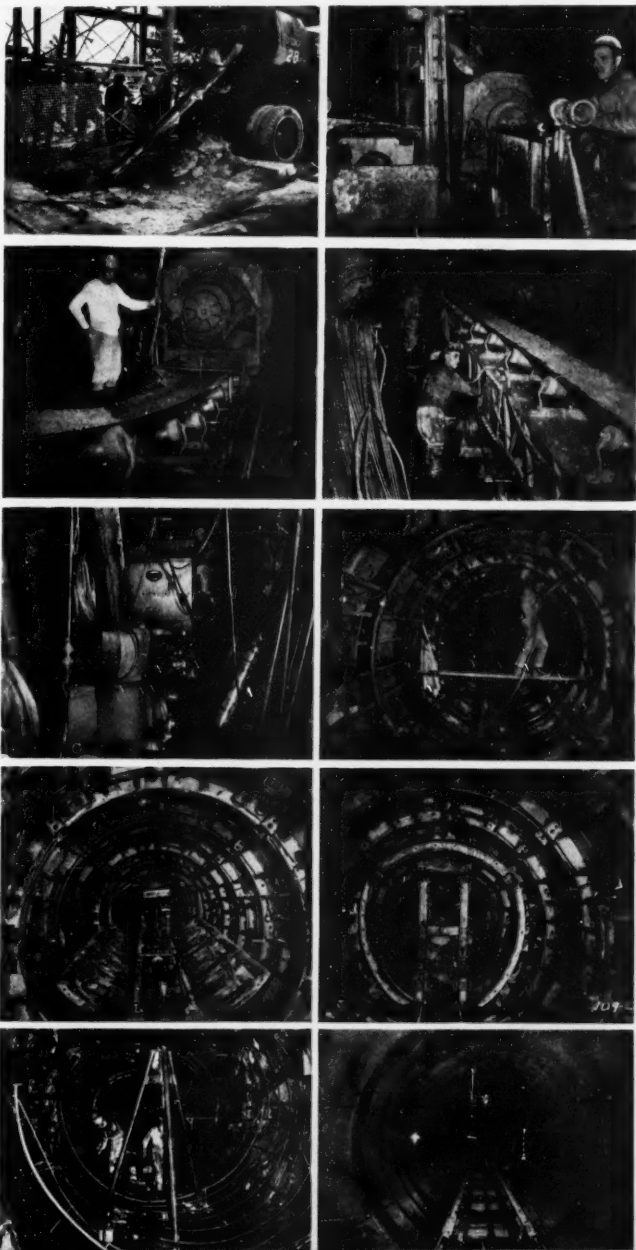
In boring the tunnel through the rock, a full section heading was drilled and shot each round. Five 3½-inch pneumatic drifters were used on the drill carriage. Drill steel was forged in multiples of two feet for the first tunnel; removable bits were used on the second section.

Depth of the average of 32 holes drilled per shot was 7 to 9 feet; average pull was six feet. Dynamite consumption per cubic yard approximated six pounds. This was 40 per cent and 60 per cent gelatin in one and one-quarter by eight-inch sticks, with electric delay exploders.

The mucking machine was air driven. It operated on a 36-inch gauge track and traveled on a 24-inch-wide track. There

Below—Ready-mixed concrete was brought from a plant at Woodberry, discharged through drop pipes into railroad car-mounted Jaeger agitators, pushed by locomotive to a conveyor which discharged into the Pumpcrete or Pressed and Welded Products unit, the latter placing the backing around concrete pipe with which part of the tunnel is lined. The first six illustrations show the sequence of the concreting operation. The placing machine is a Pumpcrete; the workman is using a vibrator against the inside of the steel forms. The next two pictures show how the forms were dismantled and telescoped through to their next position. The arch was hinged at two points. It was in five-foot sections and bolted together in 20-foot lengths to facilitate handling. The last two views show the steel work and a finished section of tunnel. The pipe jigs and blocks were for positioning the reinforcing; the tripod for supporting the concrete "shooting pipe." The track carriage is shown in the foreground of the last picture, as well as the invert form and the arch form in the background.

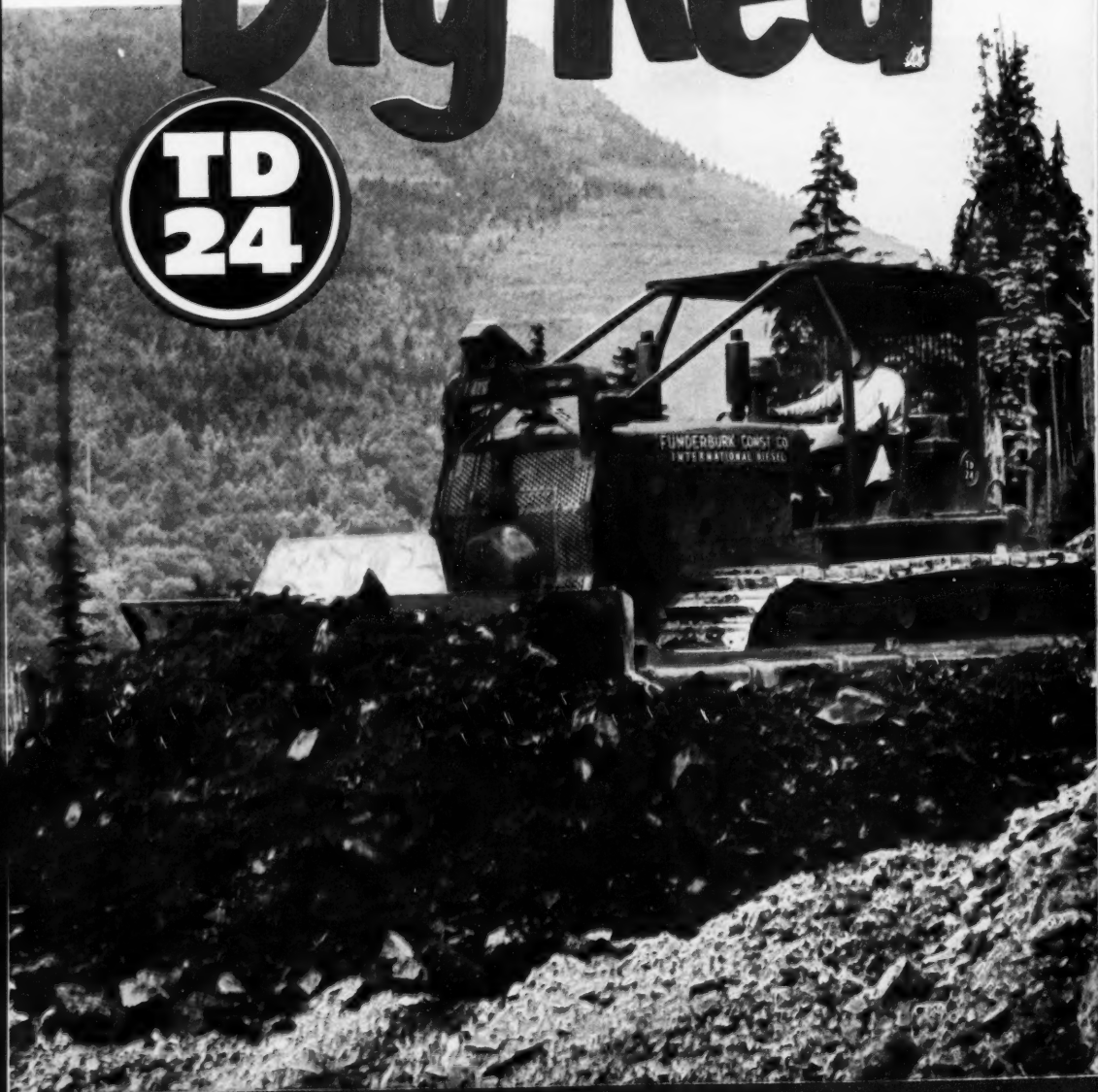
(Bureau of Water Supply Photographs by G. W. Schudel.)



(Continued on page 53)

"Big Red"

**TD
24**



Beats Blue Mountain

Read how the International TD-24 pays off, helping build mountain-top radio station.

Out near Seattle rise two 3,000-foot peaks that have suddenly become mighty important. Blue Mountain and Wheeler Mountain, a mile apart, are the bases for new antenna towers of what will be one of the most powerful radio stations ever built.


Toughest part of the construction job was building roads up the mountains. First the Funderburk Construction Company conquered Mt. Wheeler. Then they bought a new International TD-24 and started gouging out the rocky road to the top of Blue Mountain. And with the big red champ on the job, they moved faster, easier, more profitably.

"It's the TD-24's power and Planet Power steering that pay off," says Ed Funderburk. "The TD-24 stays up in the bank easier and

pushes bigger bladefuls farther than any other tractor can. This means lots more material moved at the end of the day."

It means more work done on any job. See for yourself. See your International Industrial Distributor and get the real low-down on the TD-24. And check up on the service your distributor can give you over the hard-working years ahead. With factory-trained mechanics and ample shop facilities, backed up by International's strategic network of parts depots across the country, your International Industrial Distributor is all set to keep your International power on the job for you and the nation!

**INTERNATIONAL HARVESTER COMPANY
CHICAGO 1, ILLINOIS**



TOP THIS ONE! Building a 14-mile road to "top" Blue Mountain means dozing down 250,000 cubic yards of material—mostly rock. It's a job that calls for the brute power of the world's most powerful crawler—the International TD-24.

RECESS FOR THE CHAMP! It's child's play for Ed Funderburk's TD-24 when the skinner lays off dozing long enough to pull stumps from the new road's right-of-way.

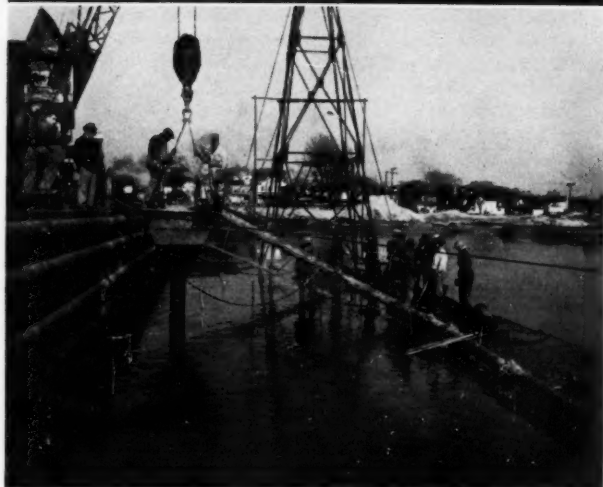
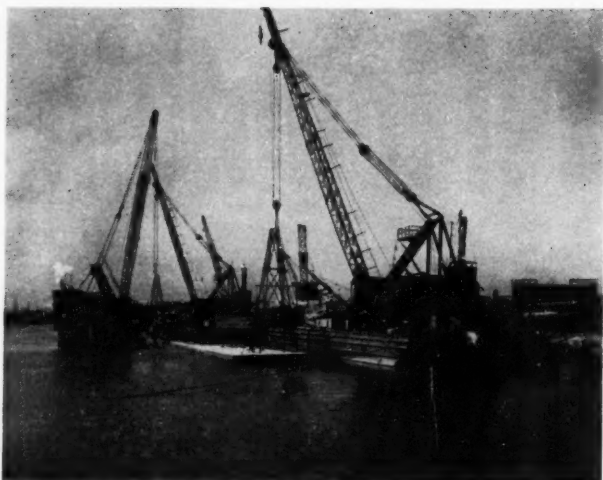


**INTERNATIONAL
HARVESTER**

INTERNATIONAL

POWER THAT PAYS





Merritt-Chapman & Scott Sinks First Tunnel Section

The first of seven 300-foot-long underwater sections of the two-lane vehicular tunnel now under construction beneath the Elizabeth River here was sunk into position late last month by Merritt-Chapman & Scott Corp., general contractors on the project for the Elizabeth River Tunnel Commission.

If weighed "in the dry," the watertight tunnel section would have tipped the scales at more than 9,100 tons, including approximately 600 tons of steel used in construction of its double-shelled casing and approximately 8,500 tons of built-in concrete. Its buoyancy had been carefully calculated, however, so that it weighed less than 100 tons as it was guided to the bottom by two Merritt-Chapman & Scott floating derricks.

The Elizabeth River crossing is a trench-type tunnel, tenth of its kind to be built in the United States. In a project of this type, the steel casing for the underwater part of the tunnel is built sectionally ashore on shipways, in this case at the Bethlehem Yards at Sparrows Point, Md. Made watertight by bulkheads at either end, the double-shelled steel casings are then towed to the tunnel site and are fitted there with an 18-inch-thick interior ring of concrete and sections of its 22-foot-wide roadway slab.

Weighted by additional concrete between the inner ring and outer-octagonal shaped shell, the sections are then sunk one by one into exact position in a trench 50 feet deep by 40 feet wide dredged across the river bottom. As the sections go into place, they are bolted together by divers. In the last phases of construction, these joints between sections are sealed by heavy rings of concrete poured underwater, and the trench in which the tunnel lies is covered with backfill. Bulkheads between the sections are holed through, the joints are welded tightly from the inside and the final interior work on the tunnel is completed in the dry underwater.

Each of the sections for the Elizabeth River tunnel measures 35 feet, four

Left — Photographs showing first of seven 300-foot underwater sections being sunk by Merritt-Chapman & Scott Corp. for two-lane vehicular tunnel beneath Elizabeth River at Norfolk, Va. Top view shows section almost awash, as it receives the final concrete between the inner and outer shells. The Chelsea and Chickasaw have slings fixed to each end of the tube. Second picture shows tremie concrete being placed. The concrete was mixed by a floating plant and pumped through about one-quarter mile of 8-inch pipe to both sides of the section to keep it trim. The derrick Chinook holds the tremie tube. Bottom — Concreted to point of negative buoyancy, the section hangs in the slings. The oil-well like steel structures are the target masts on which engineers took sights. Six 30-ton concrete blocks were lowered along the top of the tube to serve as temporary ballast.

inches, across the width of the octagonal-shaped outer shell. The one sunk recently went into position immediately facing the tunnel's land approach on the Berkley side of the river.

Weighted down to a point approaching negative buoyancy by the 8,500 tons of concrete, the tunnel section was barely awash as operations started. First step was to maneuver the tube into exact position above its blueprint location in the river bottom trench.

Two Merritt-Chapman & Scott floating derricks, the "Chelsea" and "Chickasaw," took up stations at either end of the tube, hooking their slings into plate shackles built into the top of the section. Sighting through transits ashore at pinpoint masts atop either end of the tube, engineers wigwagged signals to the derricks until the section had been maneuvered into exact alignment.

With the tube in position, approximately 100 tons of concrete was pumped by eight-inch pipes from mixers ashore and poured into the "pockets" between the tubes inner and outer shell. The section, supported by the slings of the two derricks, was then gently lowered until it came to rest on the specially prepared gravelled base at the bottom of the trench 64 feet below water. As it went down, engineers maintained transit sights on the two masts to insure that the section remained in absolute alignment.

Plans for the tunnel call for the first underwater section on the Berkley side of the river to follow a 4.8 grade, and the gravel base of the river bottom trench had been prepared accordingly. As the tunnel section came to rest on the bottom, divers were sent below to make sure it sat evenly, and further transit readings were taken to determine that the grade was exact.

When the tube was finally positioned in exact place, six 30-ton blocks of concrete were lowered and spaced along its top to act as temporary additional ballast until further alignment tests are taken. Fresh transit readings will be taken tomorrow. If it is found that the section has not shifted position in any direction, another 2,000 tons of concrete will be placed underwater by tremie method between the inner and outer shells to complete the ballasting of the tube. Sand will then be chuted down by pipe from a derrick barge until the tube is firmly embedded up to the first "knuckle" of the outer octagonal-shaped shell.

Three of the other six sections to be used in construction of the tunnel are now at Merritt-Chapman & Scott's "shape-up" pier on the Berkley side of the river, in various stages of concreting. A second section soon to be sent to the bottom and bolted to the one sunk today. A semi-circular earth fill dike will then be built across the two sections. The dammed area at the river's edge will then be pumped clear, permitting "in the dry" construction of a joint between the first underwater section and the land approach.

Including its 2,100-foot underwater section, the Elizabeth River tunnel will run 3,400 feet from portal to portal. It is

McKethan Describes Florida Highway Program

Florida this year has budgeted \$67,158,360 for work on the primary road system and \$21,669,400 for secondary or farm-to-market road projects. In addition, \$1,583,891 has been earmarked for projects at educational institutions, state parks and farmers markets. For the first time funds have been allocated to build turnouts off state-maintained highways for school buses and rural mail carriers.

During 1950, according to Chairman Alfred A. McKethan, of the Florida State Road Department, the total of projects under way or completed, including carry-overs was 1,820.8 miles, the largest road program in the State's history. During the same period, 28,212 feet of bridges were constructed or let to contract.

As of December 31, 1950, secondary road projects included in the budget for that year were more than 90 per cent completed or in progress. Out of the budgeted amount of \$12,915,880 for secondary road projects, work costing \$11,670,230 was under way or advertised by that date.

Speaking before the Association of County Commissioners, Mr. McKethan pointed out that the tempo of Florida highway building has increased materially and is up 65 per cent over activity in 1949. Since then, Florida has risen from twenty-third place to eighth place in the country in dollars invested in highway construction.

This is an impressive record, he stated,

but we are just making a beginning. The highway department's planning division, working in conjunction with the Bureau of Public Roads, has estimated that \$400,000,000 would be required to bring Florida's primary system up to standards set by American Association of State Highway Officials. A like amount would be needed for the secondary system.

The next two years, he predicted, will see the tempo of Florida highway construction maintained, if not actually increased, if the requirements of defense or a general war do not interfere by making road and bridge construction materials in shorter supply than they are at present.

The tentative Florida highway budget totals \$141,000,000. This, Chairman McKethan explained, was set high and every type of work in every section of the state included, so that if defense needs block one project, another can be substituted quickly without upsetting the whole program.

The Florida State Road Department, he said, has not requested any additional revenue to build highways. "Our policy will be the same as it was two years ago," he concluded. "We will take what money the legislature allocates to us and give Florida the maximum benefit that money will provide in new highways and bridges under the strictest and most economical planning."

part of the tunnel-bridge expressway linking Norfolk and Portsmouth scheduled for completion in 1952. Under a joint contract awarded by the Elizabeth River Tunnel Commission, Merritt-Chapman & Scott are building the tunnel between Berkley and Portsmouth, beneath the Southern branch of the river, and the Tidewater Construction Corp. is building the bridge over the Eastern branch, between Norfolk and Berkley.

Burton F. Sanders is project manager for Merritt-Chapman & Scott, working under William Denny, head of the company's New York marine and heavy construction division, and Ralph E. Desimone executive vice president and general manager of M-C&S. Parson, Brinckroff, Hall and Macdonald are consulting engineers on the tunnel phase of the project, with George Murphy serving as project engineer.

Thornton New Chairman of Texas Highway Commission

E. H. Thornton, Jr., new chairman of the Texas State Highway Commission, is a lawyer with long experience in the civil and corporate fields. He is a member of the law firm of Williams & Thornton, of Galveston, and is a member of the Galveston County, Texas, State and American Bar Associations. He served six years as a member of the Texas legislature and was chairman of its appropriations committee.

Son of E. H. Thornton, vice chairman and general manager of the Board of Trustees of Galveston Wharves, the new highway commission head was born in

February, 1910, at Houston and came to Galveston when he was nine years of age. He was educated in the public schools, graduating from Ball high school in 1927 as valedictorian.

Mr. Thornton entered the University of Texas in 1927 and was graduated with an LL. B. degree in June of 1932. Since then he has been engaged in the practice of law. He is a member of the Galveston Chamber of Commerce and vice president of the Galveston Rotary Club. He also belongs to the Maco Stewart Post 20 of the American Legion and was its first World War II commander.

He was married in 1941 to Ramona Meyers of Colorado Springs and has one child, Andrea Leslie Thornton.

Losers Win After All In Halliburton Contest

Here's one contest in which you just couldn't lose.

In the recent contest held by the Halliburton Portland Cement Company to name their advertising trade character, all 650 entrants have just received Sheaffer Fineline automatic pencils, compliments of the Halliburton Company.

Cash awards totaling \$1,000 had previously been awarded to the three winners selecting the name "Hardy Hal," but the Halliburton officials wouldn't let it go at that. They felt that names such as Shellburt, Hal C. Ment, and Shelly, were just too good to go unrewarded.

The pencils carry on the theme of the contest, having a picture of Hardy Hal (a little character with a cement bag body and oyster shell head) and the inscription "Meet Hardy Hal" written just below.

Corps of Engineers Expands Procurement Program

by

COL. B. S. SHUTE

Chief

Procurement Division
Chief of Engineers

To keep pace with increasing demands of the current procurement program, the Chief of Engineers has recently expanded military supply procurement activities in four of the Corps' District Engineer offices, namely: New York, Philadelphia, Pittsburgh and St. Louis. These facilities will take over part of the work which was formerly done in the Chicago Procurement Office. The purpose of this article is to acquaint American businessmen with this expansion and to list their various points of contact with the Corps.

The expansion is designed to bring purchasing activities geographically closer to industrial centers of the country. No new offices or procedures are involved. Military supply procurement, that is the procurement of Engineer items for all military forces, has merely been expanded to four existing offices of the Corps.

These four additional procurement units are now being expanded to receive their full procurement load. During this transition period the four newly expanded units will not be able to procure all of their assigned items. Procurement programs, in excess of their capacity, will be accomplished by the Chicago Procurement Office.

Assignments of Engineer items for procurement to the five offices are based on the end use or purpose of the products. Following are the offices and types of items assigned for procurement:

Construction Equipment, Chicago Procurement Office—Corps of Engineers, 225 West Jackson Boulevard, Chicago 6, Ill. Col. Wendell P. Trower, chief—Agricultural machinery and implements; Augers—earth power operated; Compressors—air; Bituminous paving machinery; Conveyors; Cranes—overhead; Cranes—pneumatic tired and attachments; Dredgers; Dredging machinery and equipment; Finishers— asphalt; Hoists—winches, windlasses; Loaders—aggregate and snow; Logging equipment; Mowers—hand and powered; Plows—snow, V-blade, straight-blade, truck and tractor mounted; Pneumatic tools; Rollers—road; Rooters—road; Sawmills and saws—powered; Scrapers—road; Tractors—crawler and wheeled and attachments; Well drilling machinery and equipment; Woodworking machinery; Trailers and semi-trailers; Truck and Trailer bodies;

Construction Materials, St. Louis District—Corps of Engineers, Room 834, U.S. Courthouse and Customhouse, St. Louis 1, Mo. Maj. Edward B. Campbell (Acting)—Asphalt; Builders hardware; Cloth—wire; Gypsum basic products; Hose—all types; Lumber and allied products; Nails and spikes; Pipe—all types; Plumbing fixtures; Plumbing specialties; Roofing, all types; Steel—reinforcing and structural; Tubing; Wire—barbed and smooth; Wire—fencing and netting; Wire—insect screening;

Fixed and Floating Bridges, Boats and

Related Equipment, Pittsburgh District—Corps of Engineers, 925 New Federal Building, Pittsburgh 19, Pa., Col. Conrad P. Hardy, district engineer—Boat—plywood; Boat—pneumatic; Boat—power; Bridges—fixed, general; Bridges—floating, general; Dredges; Floats—pneumatic; Mats—airplane landing; Motors—outboard; Pontons—aluminum;

Utilities Equipment, Philadelphia District—Corps of Engineers, P. O. Box 8629, Philadelphia, Pa., Col. Ralph E. Cruse, district engineer—Air conditioning equipment; Capacitors; Circuit breakers; Disposal plant equipment; Distillation equipment; Domestic water heaters and storage tanks; Extinguishers—fire; Fire-fighting equipment and accessories; Flood lights; Foam generators; Generators—gas and diesel powered; Ice plants; Lamps and lamp bulbs; Motors; Pole line equipment; Pumps—water, all types; Railway track accessories; Recharging units; Searchlights (anti-aircraft); Sedimentation equipment; Softening equipment; Space heaters; Specialized sewage equipment; Sprayers—insect; Steam and hot water heating equipment; Switches; Tanks—steel and wood; Transformers; Vacuum cleaners; Water Purification equipment;

Surveying, Mapping, Reproduction and Special Military Equipment, New York District—Corps of Engineers, 80 Lafayette St., New York 13, N. Y., Col. E. P. Ketchum, district engineer—Alidades; Altimeters; Ammonia—brown print and other duplicating machinery; Angularators; Astrolabes—barometers; Blueprint equipment; Calcium chloride and special chemicals used in reproduction processes; Camera—copying; Camouflage nets and related equipment; Collimators; Compass—surveying; Drafting machines; Drawing instruments; Half-tone screens; Infra-Red equipment; Levels; Lithographs—off-set presses; Mobile map reproduction units; Multiplex equipment; Odographs; Pantographs; Photo engraving, engraving and photolithographic machinery; Photogrammetric mapping equipment; Photostat machines; Planetables; Plate graining machines; Polarmeters; Printing frames; Printers—photo; Projectors; Rules—plotting; Rules—slide; Scales—plotting; Screen contact printing; Sketchmasters; Stereocomparagraphs; Stereoscopes; Tapes—chain and reel; Theodolites; Transits; Triangles; Triangulation tower—bilby type.

These offices procure nationwide and conduct mobilization planning for their assigned groups of items.

The expanded procurement structure also provides additional procurement service offices located in industrial centers producing engineer type items. The functions of these procurement service offices is to provide complete contract administration services in their assigned areas to the five procurement offices listed above. These services include production, expediting, inspection, processing and packaging, documentation, movement, government assistance and facility development functions.

Contracting Officers in the five procure-

ment offices retain complete responsibility for the proper execution of contracts, but the procurement service offices provide them with complete service short of contractual changes and those functions not subject to redelegation under existing laws and regulations. Procurement service offices are located in the following cities:

South Atlantic Division, Corps of Engineers, U. S. Army, P. O. Box 1889, Atlanta, Ga.

New England Division, Corps of Engineers, U. S. Army, P. O. Box 2316, Boston 7, Mass.

New York District, Corps of Engineers, U. S. Army, 80 Lafayette Street, New York 13, N. Y.

Pittsburgh District, Corps of Engineers, U. S. Army, 925 New Federal Building, Pittsburgh 19, Pa.

Philadelphia District, Corps of Engineers, U. S. Army, P. O. Box 8629, Philadelphia, Pa.

St. Louis District, Corps of Engineers, U. S. Army, Room 834, U. S. Courthouse and Customhouse, St. Louis 1, Mo.

Louisville District, Corps of Engineers, U. S. Army, P. O. Box 59, Louisville, Ky. Fort Worth District, Corps of Engineers, U. S. Army, 1127 Texas and Pacific Building, Fort Worth, Texas.

Chicago District, Corps of Engineers, U. S. Army, 520 Merchandise Mart, Merchandise Mart Plaza, Chicago 54, Ill.

Detroit District, Corps of Engineers, U. S. Army, Rm. 2015 Cadillac Tower, 65 Cadillac Square, Detroit 26, Mich.

San Francisco District, Corps of Engineers, U. S. Army, P. O. Box 3050—Rincon Annex, San Francisco, Calif.

Seattle District, Corps of Engineers, U. S. Army, 4735 East Marginal Way, Seattle 4, Wash.

St. Paul District, Corps of Engineers, U. S. Army, 1217 U. S. Post Office and Customhouse, 180 E. Kellogg Blvd., St. Paul 1, Minn.

Rock Island District, Corps of Engineers, U. S. Army, Clock Tower Bldg., Rock Island, Ill.

Milwaukee District, Corps of Engineers, U. S. Army, P. O. Box 744, Milwaukee, Wisc.

Buffalo District, Corps of Engineers, U. S. Army, Engineer Park, Buffalo 7, N. Y. Los Angeles District, Corps of Engineers, U. S. Army, 751 S. Figueroa St., Los Angeles, Calif.

Some of these offices have procurement as well as procurement service responsibility.

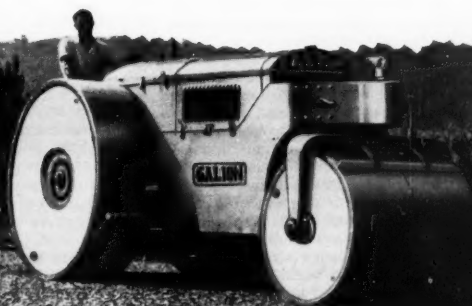
The initial point of contact for firms desiring to sell military supply items to the Corps of Engineers is with one of the 17 procurement service offices listed above. Contacts for mobilization planning matters, only, should be made with the nearest office assigned that function. For current procurement matters, the service office nearest to a firm should be contacted. By representing all five procurement offices, these service offices will be able to advise vendors as to the correct procedures in dealing with the Corps. Subsequent to contract award, these same offices will continue to work with vendors toward the complete satisfaction of the

(Continued on page 52)

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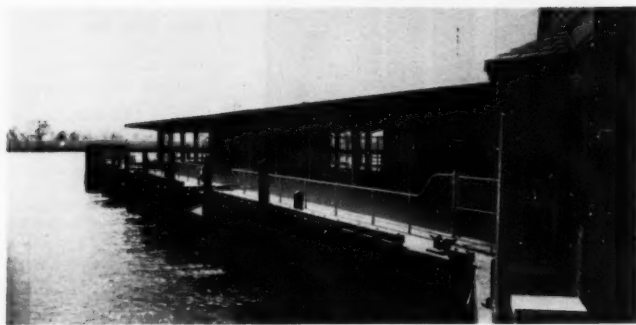
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Above—New 340-foot long pier 4 at Washington, D. C.

Pier 4 built at Washington, D. C., for use by river excursion boats was recently completed by the Corps of Engineers, U.S. Army. The pier, located at Main Avenue and Sixth Street, S.W., is a reinforced concrete structure 340 feet long and 75 feet wide.

A colonial style brick ticket office stands at the head of the pier with rest rooms and storage rooms out on the pier. Under a reinforced concrete canopy, which extends over the full length of the pier, fences were constructed for channelizing the crowds boarding and leaving the excursion boats. Equipment is also provided to render minor services to the docked vessels.

Work on the pier began in March 1948

when Lipsett, Inc., of New York, started placing the creosoted timber piles which, with concrete caps, form the substructure. F. H. Martell, of Washington, D. C., contractor for the superstructure, completed the work under his contract in February.

An unusual feature of the project is the fact that the entire beam and slab system which forms the deck was poured by Martell in one continuous operation in which nearly 1,400 cubic yards of concrete were placed during a fifteen-hour period.

Completion of the pier at a cost of approximately \$800,000 marks a substantial advancement in the planned improvement of Washington Harbor and contributes substantially to the beautification of the waterfront.

Tulsa District Steps Up Military Construction

Military construction activities of the Tulsa, Okla., District of the Corps of Engineers are being stepped up due to expanded Air Force and Army construction programs, according to Col. Edward G. Herb, district engineer.

Colonel Herb, who is responsible for administering the military construction program for all of Oklahoma and parts of Texas, listed a number of major items of work that have already been commenced or will commence in the near future. Largest military project in Oklahoma at the present time is at Tinker Air Force base, Oklahoma City, and largest project under his jurisdiction in Texas is at the Amarillo Air Force base, Amarillo, Texas.

Tinker Field plans call for a warehouse and a special purpose vehicle and power equipment building. Total involved in the two jobs is estimated in excess of \$5,000,000. Hudgins, Thompson and Ball, of Oklahoma City, were awarded a contract for design of the warehouse; Manhattan Construction Co., Muskogee, Okla., has the construction contract. The special purpose building has not been released.

The Tulsa District is presently designing plans for a propellant fuel storage facilities installation, to cost approximately \$175,000, and radar facilities of a ground control approach system and an airport surveillance system, both at Tinker Field.

Cost of the two systems will approximate \$155,000.

At the Amarillo Air Force base, Amarillo, Tex., the Tulsa District is designing the rehabilitation of six buildings, while Bently, Broad, and Nelson, of Dallas are designing five new buildings. Lambie and Moss of Amarillo will do the construction work.

Hasie and Green and Associates, Consulting Engineers of Lubbock, Tex., are handling the design of new roads and paved areas, and new utilities. The job at Amarillo is the largest military construction project under jurisdiction of the Tulsa district at present.

Largest part of the military construction program now underway by the Tulsa district is in Texas, where the northern tier of counties are under jurisdiction of Tulsa for military construction. Civil works boundaries of the Tulsa district go deeper into Texas.

At the Perrin Air Force base near Sherman, the Southwestern General Construction Co. of Dallas has a contract for resurfacing runways. At the Lone Star Ordnance division of the Red River Arsenal, Texarkana, rehabilitation is covered under contract let to the J. M. Brown Construction Co. of Shreveport, La.

The Tulsa District will seek a sponsor for a Wherry housing project at the Red River Arsenal. This calls for 55 units.

The project will be awarded to the lowest responsible bidder based upon lowest replacement cost of the project. Also being designed by the Tulsa district is refueling of ordnance storage igloos.

At Sheppard Air Force base near Wichita Falls, Tex., a Wherry housing project of 612 frame duplex and single dwellings is now in the design stage. Charles E. Armstrong of Fort Worth, Tex., is the architect-engineer.

In Oklahoma work was commenced a short time ago at the Vance Air Force base near Enid on resurfacing of existing runways and extension of parking apron. This work was designed in the Tulsa District Office. Contract was let to J. Brisco, Stillwater, Okla.

While present military construction work in Oklahoma has been slight, with the exception of the Tinker Field job, indications are that additional work will be soon forthcoming. The Air Force is presently making a survey of some deactivated air fields and facilities, with the possibility of rehabilitation and reactivation. Within the jurisdiction of the Tulsa District are approximately 30 such installations, with the majority of them in Oklahoma. Future action and decisions of the Air Force will be the guide in making known the extent of this work.

In all probability there is now, or will be coming up shortly, approximately 40 million dollars worth of military construction within the Tulsa District as a result of the Second Supplemental Military Appropriation Bill—fiscal year 1951. A Third Supplemental Military Appropriation Bill is in the making, which is expected to be very large, but the exact location of work under that bill is, of course, unknown at the present time.

Since the acceleration of military construction by the Tulsa District a large number of inquiries have been made by contractors seeking to find out how they might qualify for work under this program. This method has been outlined to them by Colonel Herb. This plan is in effect in most districts of the Corps of Engineers. The most widely used and known method of seeking bids is by use of the standard procedure of advertising publicly by mailing list, newspaper, and radio. Other methods must, of necessity, be used whereby the work can be expedited so that all concerned will not be hopelessly bogged down by the work at hand. Three methods which have proven expedient which the Tulsa District will use in the awarding of construction contracts, the method depending upon the time available for completion.

Preferred method is to advertise for bids on the basis of completed plans and specifications, providing the minimum time for preparation of offers. When work is thus advertised, a select list of bidders is advised of the work in order that there may be sufficient competition. Other offers may be submitted if so desired. An illustration of this is that all contractors in North Texas who owned hot-mix plants were telephoned and advised of the Perrin Field job. About three offers were expected as a result, but ac-

tually there were six bids.

When plans and specifications are not clearly defined and time does not permit receipt of offers, it becomes necessary to negotiate with one firm. This method of contracting is not desirable, and will not be used any more than absolutely necessary. The Tulsa District Office has made use of this method only four times to date.

The remaining method of contracting is a cost-plus-fixed-fee system. The Tulsa district does not propose its use if it is practicable to obtain completion of the facilities by the ready date by use of other methods of contracting.

Contracts will, of course, differ, but in the majority of cases will be let in accordance with the type of work to be performed, thus making separate contracts for such items as paving, utilities, and buildings. Some of the installations at which the Tulsa District is working will, however, have all types of work under one contract, while others will have separate contractors operating on different phases.

Many inquiries have come into the Tulsa District Office from contractors and representatives, asking for information as to how they might qualify for construction and rehabilitation work at Army and Air Force installations under the military construction program of the Tulsa District. This procedure is very simple, according to Colonel Herb.

All that is necessary in the Tulsa District (or nearly any district for that matter) is to obtain one of the two types of questionnaires, which, when filled out, becomes valuable information to the district as well as to the contractor. One of these questionnaires is for AE firms, and the other is for contractors.

Freeport to Drill in Texas

Freeport Sulphur Co. has sulphur rights on a prospect at Nash Dome in Texas and will soon begin exploratory drilling, according to President Langbourne M. Williams, Jr.

Nash Dome, located about 35 miles southwest of Houston, is the sixth Gulf Coast salt dome where Freeport is seeking sulphur. The company recently announced plans to prospect four domes in Louisiana and to build a sulphur-mining plant at another dome in that state.

The Nash prospect is known as the Belle Wisdom acreage. The dome has been partially explored previously but additional drilling will be necessary to determine whether sulphur exists in commercial quantities, Mr. Williams said.

Lion Building Casing Head Plant in Scurry County

August 1 has been set as the probable completion date for the \$8,500,000 Diamond M-Sharon Ridge gasoline plant being constructed in Scurry County, Texas by Lion Oil Co., which will operate it for a group of owners producing in those fields. The plant's capacity is set at 50,000 M.C.F. per day. Hudson Engineering Corp. is doing the engineering and part of the construction. Some has not been contracted yet.

Gillioz Starts Steel on Arkansas River Span



Above—Piers for Fifty-First Street Bridge over Arkansas River.

Contractor M. E. Gillioz, contractor of Monett, Mo., has started laying steel on a group of 23 massive concrete piers that will accommodate the Oklahoma state highway commission's \$1,135,898 bridge at the Fifty-first street crossing on the Arkansas river on U. S. Highway 66 at Tulsa.

Homer X. White, state bridge engineer, who designed the plans, says each pier consists of three columns supported on individual footings and supporting a cross beam which consists of the bridge seat and web and is designed as a T-beam. Below the beam web is a solid web between the columns. This is separated from the beam web by 1-inch expansion material to permit the beam to act independently.

Maximum height of pier from bottom of footing to bridge seat is 56 feet by 5 inches. Width of pier seat is 63 feet and size of largest footing is 8 feet by 14 feet. Footings are founded 6 feet into shale and slate. Bottom footings average 18

feet below stream bed and 36 feet below high water.

Concrete in the piers totaled 5520.4 cubic yards. The largest required 253.1 cubic yards.

Total reinforcing steel for all piers amounts to 439,000 pounds with the largest pier using 20,100 pounds.

The first eight piers were built inside steel sheet pile coffer-dams. All other piers were open construction inside a well point system.

The superstructure will consist of six units, each consisting of four 100-foot continuous I-beam spans.

Roadway will be double 27-foot lanes separated by a 4-foot concrete median and two 4-foot sidewalks.

Specifications call for approximately 6,000,000 pounds of structural steel.

Unit bid prices for pier quantities were: Substructure excavation common, \$9; substructure excavation rock, \$20; class A concrete, \$40; Class A concrete pier base, \$50 and reinforcing steel, .08.

Armour Building \$850,000 Blood Plasma Plant

Armour and Co., has started building a new blood-processing plant at Fort Worth, Texas.

The plant, in which The Armour Laboratories will produce dried human blood plasma under contract for the Army, will cost approximately \$850,000. Eventually it is expected to handle up to 15,000 pints of blood a month. It is the only such plant in the southwest, though the Army has set up similar plants under private operation in other parts of the country.

Wyatt C. Hedrick, of Fort Worth, is the architect. The contractor is Thomas S. Byrne, also of that Texas city.

Armour was selected by the Army to operate the southwest plant because its similar work in World War II, plus a great deal of research work since, left it with valuable experience and a staff of ready experts in this field.

The civilian population of the southwest, hitherto practically "untapped" according to the Army, will supply the blood from voluntary donors through collecting machinery to be set up by the American Red Cross for the Army.

Lubbock Plans Widening Avenue to 84 Feet

Lubbock, Texas, plans to widen North College Avenue. The pavement, according to W. B. Holmes, city engineer, will be constructed eighty-four feet wide from Fourth Street North to Clovis Road, a distance of approximately 4,600 feet. Plans are now being prepared by Parkhill, Smith and Cooper, consulting engineers of Lubbock. They call for a caliche base, quadruple asphalt surface and concrete curb and gutter. Bids will probably be received early in May and completion effected by October 15.

Maxwell Apartments in Georgia Completed

Maxwell Apartments, at Augusta, Ga., was finished recently by Daniel Construction Co. The 250-family apartment-hotel, designed by the architectural firm of William G. Lyles, Bissett, Carlyle and Wolff, is reported in the neighborhood of \$2,000,000.

A similar project, the Calhoun Towers, was recently completed in Greenville, and was designed by the same architectural firm, also built by Daniel.

\$2,004,470 in Low Bids Made for Missouri Roads

Low bids totaling \$2,004,470 were received March 2 by the Missouri State Highway Commission. All but two—in St. Louis and Mississippi counties, have been awarded. Located in thirty-three counties, the projects include the following:

Laclede County—Route 66, 3.993 miles graded earth and 24-foot Portland cement concrete: O'Dell and Riney Construction Co., Kirkwood, \$250,567;

Webster County—Route 66, 9.860 miles graded earth and 24-foot Portland cement concrete: O'Dell and Riney Construction Co., \$572,472;

Platte County—Route 71, 10.062 miles of 24-foot asphaltic concrete widening and resurfacing: Reno Construction Co., Overland Park, Kansas, \$403,205;

Buchanan County—Route 71, 0.137 of a mile graded earth, bridges and 22-foot Portland cement concrete pavement: Knutson-Gould Construction Co., Kansas City, \$96,045;

St. Louis County—Route 66TR, 0.223 of a mile graded earth and 12-foot Portland cement concrete pavement and traffic signal system: Henry L. Perkinson Construction Co., St. Louis, \$58,118;

St. Francois — Route ST, 9.344 miles graded earth and chat, gravel or crushed stone surface: Blackburn and Whiteside, Mammoth Springs, Ark., \$48,151;

St. Genevieve County—Route ST, 1.942 miles graded earth, bridge and chat, gravel or crushed stone surface: Blackburn and Whiteside, Mammoth Springs, Ark., \$18,763;

Macon County—Route SH, 6.587 miles graded earth: R. B. Jeffrey, Moberly, \$16,942;

Clay County—Route SC, 6.930 miles of graded earth and gravel or crushed stone surface: Midwest PreCote Co., Kansas City, \$92,251;

Boone County—Route SJ, 5.950 miles graded earth and gravel or crushed stone surface: Howard Construction Co., Sedalia, \$31,773;

Mississippi County—Route SHH, 5.925 miles graded earth and gravel or crushed stone surface: Blackburn and Whiteside, Mammoth Springs, Ark., \$27,948;

Gentry County—Route SC, 2.746 miles graded earth, bridge and gravel or crushed stone surface: Krehbiel Stalker Construction Co., Columbia, \$37,236;

Carroll County—Route SF, 3.087 miles of graded earth, bridge and gravel or crushed stone surface: Midwest PreCote Co., Kansas City, \$37,731;

Wright County—Route SP, 2.913 miles graded earth and gravel or crushed stone surface: E. L. Harlin, West Plains, \$10,001;

Macon County—Route ST, 5.798 miles gravel or crushed stone surface: N. J. Cooksey Co., Moberly, \$11,837;

Sullivan County—Route SW, 8.895 miles gravel or crushed stone surface: Carl Partin, Milan, \$14,547;

Macon County—Route SH, 6.539 miles oiled earth: Vance Brothers, Kansas City, \$7,617;

Stoddard County—Route SA, 8.527 miles oiled aggregate surface: Rock Hill Asphalt and Construction Co., Clayton, \$15,287;

Linn, Sullivan and Adair Counties—Division 2, Group 1, 35.104 miles oiled aggregate surface: St. Joseph Fuel Oil and Manufacturing Co., \$59,730;

Henry and Benton Counties—Division 4, Group 1, 16.300 miles oiled aggregate surface: Midwest PreCote Co., Kansas City, \$16,660;

Barry County — Division 7, Group 1, 7.789 miles oiled aggregate surface: Joseph L. Pohl, Contractor, Nevada, \$6,976;

Taney County—Division 8, Group 1, 19.441 miles oiled aggregate surface: Vance Brothers, Kansas City, \$19,809; Carter, Douglas, Howell, Oregon and Ripley Counties — Division 9, Group 1, 76.494 miles oiled aggregate surface: Rock Hill Asphalt and Construction Co., \$85,046;

Butler, Madison, New Madrid, Wayne and Pemiscot Counties — Division 10, Group 1, 39.916 miles oiled aggregate surface: Missouri Petroleum Products Co., Clayton, \$45,789;

Dunklin County—Division 10, Group 2, 5.619 miles sand asphalt mat surface: Porter DeWitt Construction Co., Poplar Bluff, \$19,969.

of shaping and surfacing shoulders with clam shell, reef shell base course, bituminous mixture for cold application and bituminous surface treatment (asphalt cement), State Project No. 256-02-13, Litcher-Reserve highway, State Route No. 1, Barber Brothers Co., Baton Rouge, La., \$93,412;

East Baton Rouge Parish—3.049 miles of grading, shaping roadway, small drainage structures, gravel base course and three application bituminous surface treatment (asphalt cement), State Project No. 258-01-04, Essen-Picou Lane highway, State Route No. 275, Barber Brothers Co., Baton Rouge, La., \$85,349;

East Baton Rouge Parish—3.192 miles of grading, small drainage structures, concrete flat slab span bridges, soil cement base course or, as alternates, gravel or steel base course and bituminous surface treatment (asphalt cement), State

Project No. 258-31-03 and 258-01-05, Baton Rouge-Foreman highway, State Routes No. 885 and 275, Barber Brothers Co., Baton Rouge, La., \$178,045;

Lafayette Parish—1.630 miles of grading, aggregate type base course, concrete flat slab bridges and three application bituminous surface treatment (asphalt cement), State Project No. 828-23-05, Intersection State Route 43, Pinhook highway, State Route No. 677, T. W. Kleinpeter, Baton Rouge, La., \$122,312;

Lafourche Parish—2.080 miles of grading, small drainage structures, 6 19 ft. timber trestle and 1 45 ft. I-beam span bridge and aggregate surface course, State Project No. 829-15-06 and 829-19-01, Raceland-Bayou Boeuf and Choctan-Kraemer highways, State Routes No. 486 and C-2188, Carl E. Heck, Thibodaux, La., \$96,367;

Ouachita Parish—1.114 miles of grading, small drainage structures and portland cement concrete pavement, State Project No. 837-13-02, West Monroe-Brownville highway, State Route No. C-2194, T. L. James & Co., Inc., Ruston, La., \$218,193;

St. Mary Parish—1.00 mile of surfacing existing 18 ft. concrete pavement with 2½ in. hot bituminous mixture, State Project No. 4-08-06, Morgan City-Patterson highway, State Route No. 2, T. L. James & Co., Inc., Ruston, La., \$14,819;

Avoyelles Parish—6.7 miles of sand clay gravel surface course (grade "B" modified), State Project No. 33-03-13, Effie-Deville highway, State Route No. 57, R. M. O'Neal, Pineville, La., \$23,323;

Rapides Parish—9.2 miles of sand clay gravel surface course (grade "B" modified), State Project No. 33-04-05, Effie-Intersection Route 123 highway, State Route No. 57, Richard Coco, Mansura, La., \$24,828;

Rapides Parish—5 miles of sand clay gravel surface course (grade "B" modified), State Project No. 74-02-09, Holloway-Northeast highway, State Route No. 123, Richard Coco, Mansura, La., \$10,658;

Rapides Parish—7.6 miles of sand clay gravel surface course (grade "B" modified), State Project No. 840-01-03, Big Island Loop Road, State Route No. C-1498, Caddo Contracting Co., Inc., Shreveport, La., \$14,098;

Road Research Engineer Joins Test Laboratory

Research Engineer R. A. Helmer has resigned from the Oklahoma state highway department after more than 19 years' service. He has joined the Standard Testing Laboratories of Oklahoma City as chief engineer. Mr. Helmer, widely known as an authority on soils related to highway construction, joined the department as an instrument man.

Texas Bitulithic Contractor for S. H. 550 Concrete Work

Texas Bitulithic Co., of Dallas, is starting work under the \$763,650 contract for concrete pavement on State Highway 550 in Tarrant County. Conventional methods of construction will be used, according to Vice President Joe T. Lee. The paver will be a Red Dual Drum.

\$2,216,597 in Road Bids Submitted in Louisiana

Low bids received March 21 by the Louisiana Department of Highways totaled \$2,216,597. The projects follow:

Terrebonne and Lafourche Parishes—0.114 mile of 5 20 ft., 5 20 ft. and 4 20 ft. I-Beam span bridges and portland cement pavement approaches, State Project No. 5-04-07, 5-05-19, and 5-06-16, over drainage canal, Minors canal, and over 40 Arpents canal, State Route No. 2, Forum-James Co., Baton Rouge, La., \$144,005;

Caddo Parish—0.238 mile of grading, drainage structures and portland cement concrete pavement, State Project No. 53-09-02, King's highway (Shreveport), State Route No. 20, Caddo Contracting Co., Inc., Shreveport, La., \$82,434;

St. John the Baptist Parish—7.70 miles

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Southern Construction Projects

ALABAMA

ALABAMA—Congress authorized \$7,000,000 for Jim Woodruff Lock and Dam and \$900,000 for Burford Dam for maintenance and improvement of existing river and harbor works; also Demopolis Lock and Dam, \$4,500,000.

ANNISTON—U. S. Engineer Office, Mobile, plans repair shop and parking area, Alabama Ordnance Depot, \$3,500,000.

ATLANTA—Alabama Polytechnic Institute plans student union building, \$1,000,000.

BIRMINGHAM—Polytechnic Institute let contract to S. J. Curry & Co., Albany, Ga., for men's dormitory, \$874,300.

BIRMINGHAM—Theta Chi Fraternity received low bid from Home Building & Supply Co. for fraternity house, \$110,000.

BIRMINGHAM—Alabama Polytechnic Institute let contract to S. J. Curry & Co., Albany, Ga., for pharmacy building, \$29,900.

BIRMINGHAM—First Presbyterian Church Congregation plans church building, \$150,000.

BIRMINGHAM—Woodlawn Baptist Church Congregation let contract to Ralph A. Smallman & Co., for education building, \$400,000.

BIRMINGHAM—Canterbury Mountain Brook Methodist Church Congregation let contract to Daniel Construction Co., Inc., of Alabama, for church building, \$300,000.

BIRMINGHAM—State Highway Department received low bid from Foster & Creighton, Nashville, Tenn., for overpass and approaches, \$387,823.

BIRMINGHAM—City sold \$2,000,000 bond issue to Halsey, Stuart & Co., Inc., & Associates, for school construction.

BIRMINGHAM—Hunter St. Baptist Church Congregation plans auditorium and 3-story educational building, \$700,000.

BIRMINGHAM—Our Lady of Grace Church Congregation plans church building, \$100,000.

BIRMINGHAM—Housing Authority plans 145-unit public housing project for white families; also 105-unit project for negro dwellings, \$1,075,500.

DEMOPOLIS—Black Warrior Electric Membership Corp. received low bid from Andrew & Dawson, Montgomery, Ala., for REA headquarters building, \$121,708.

FAIRFIELD—First Methodist Church Congregation will construct educational building, \$200,000.

FORT McLELLAN—Corps of Engineers, Mobile, let contract to T. H. Pearce & Co., Columbus, Ga., for rehabilitation of buildings, \$1,100,056.

MOBILE—East Engineering Co., Birmingham and Pittsburgh, will install bulk-handling conveyor system for Alabama State Docks and Terminals, \$750,000.

MOBILE—Corps of Engineers, Mobile District, let contract to Automatic Sprinkler Corp. of America, Youngstown, Ohio, for automatic sprinkler system facilities at Brookley Air Force Base, \$430,982.

MONTGOMERY—State Highway Department received low bids for projects in following counties:

Baldwin—7.381 mi. grad., drain, and bitum. treat.; L. J. Cousins, \$112,412.

Sumter—0.146 mi. bridges; G. W. Norrell Contracting Co., Georgiana, \$98,453.

Bibb—0.070 mi. bridge over Little Cahaba River; G. W. Norrell Contracting Co., \$84,306.

Calhoun—0.072 mi. bridge over Terrapin Creek; G. W. Norrell Contracting Co., Georgiana, \$66,725.

Morgan—9.672 mi. grad., drain, and surf. treat.; W. A. McWaters, 2 Clayton St., Montgomery, \$990,231.

Murphy—Box 888, Troy, \$120,945, for Proposal B, bridges.

Marshall—3.731 mi. grad., drain, bitum. treat., plans mix and bridge widen, on Boaz-Guntersville Rd.; Carlton Contracting Co., Box 731, Albany, \$615,186.

Cullman—2.401 mi. grad., drain, and bitum. treat., on part of Hanceville-Holly Pond Rd.; Burkner Contracting Co., Box 69, Athens, \$80,914.

Russell—6.555 mi. grad., drain, and double surf. treat.; G. W. Norrell Contracting Co., Rt. 5, Montgomery, \$79,487.

Calhoun—9.452 mi. grad., drain, bitum. treat., plant mix and bridges; Carlton Contracting Co., Albany, \$690,246, for Proposal A, and Goodway & Murphy, Troy, \$69,337, for Proposal B, bridges.

Jefferson—0.622 mi. Enslay Bypass; Foster & Creighton Co., Nashville, Tenn., \$387,823.

Clay—6.746 mi. base and bitum. treat.; J. B. Maynard, Alexandria City, \$65,249.

Marion—13.325 mi. base and bitum. treat.; Georgia-Alabama Road Construction Co., Birmingham, \$97,703.

Mobile—2.9 mi. grad., drain., single surf. treat. and plant mix; Laidlaw Contracting Co., Mobile, \$70,417.

PRIDE, N. T. CUMMIA—Tennessee Valley Authority, Knoxville, plans power gen-

eration plant, \$47,000,000.

SEILA—Department of the Army, Office of the Chief Engineer, Washington, D. C., announced funds have been appropriated for airfield pavements, mess facilities, Craig Air Force Base, \$708,000.

TENNESSEE—Tennessee Valley Authority, Knoxville, Tenn., plans steam-power plant, \$17,000,000.

YORK—City let contract to W. R. Mitchell, Pritchard, Ala., for natural gas system and transmission main, \$122,603.

ARKANSAS

ARKANSAS—Bureau of Budget, Washington, D. C., estimate for flood control for fiscal year 1952 includes following: Blakely Mountain Reservoir, \$6,000,000; Bull Shoals Reservoir, Ark. and Mo., \$14,980,000; Narrows Reservoir, \$200,000; and Table Rock Reservoir, Mo. and Ark., \$100,000, for planning and maintenance and improvement of existing river and harbor works for Arkansas River and Tributaries, Ark. and Okla., \$100,000 for planning.

BAKITE—Aluminum Company of America, Pittsburgh, Pa., starts work soon on \$55,000,000 plant.

LITTLE ROCK—State Highway Commission received low bid for project in following counties:

Crittenden—overpass and traffic interchange struc. project on Marion-St. Francis Levee Rd.; D. F. Jones Construction Co., \$491,441.

LITTLE ROCK—Highland Park Housing Authority received low bid from Lineberger Construction Co., \$1,208,329.

LITTLE ROCK—Housing Authority received low bid of \$775,893 for 110 low-rent dwelling units, Highland Park, from Braile Homes, Inc.

LITTLE ROCK—Arkansas Electric Co-Operative plans steam generating electric plant, \$10,500,000, near Ozark.

LITTLE ROCK—Corps of Engineers received low bid from Benson Clearing Co., Muskogee, for clearing 8,700 acres land near Bull Shoals Dam reservoir, \$1,367,020.

LITTLE ROCK—Pulaski County and Federal Bureau of Public Roads plans to rebuild and asph.-top Hayes St., 2.65 mi. from Hwy. 70, \$86,000, and work on Perryville Loop Rd., 7.6 mi. from 12th to Hwy. 10, \$76,000.

LITTLE ROCK—Negro Democratic Association plans headquarters building, \$50,000.

PINE BLUFF—City let contract to Lancaster & Love, Inc., Dallas, Tex., for improving city streets, \$1,525,837.

DISTRICT OF COLUMBIA

WASHINGTON—District Commissioners let contract to Cramer-Vollmerhausen Co. for 27-classroom Douglass Junior High School, \$1,712,000.

WASHINGTON—Public Buildings Service, General Services Administration, let contract to Leo Butler Co., College Park, Md., for constructing storm drainage system, St. Elizabeth's Hospital, \$86,135.

WASHINGTON—Bureau of Budget estimate for flood control for fiscal year 1952 includes snagging and clearing, \$800,000; emergency bank protection, \$750,000, and section 205 projects, \$1,000,000.

WASHINGTON—Public Housing Administration approved 40 low-rent housing units, Greer S. C., \$320,000.

WASHINGTON—District Engineer let contract to George Hyman Construction Co. for domiciliary building and utilities, Soldier's Home, \$7,200,000.

WASHINGTON—Kenwood Golf and Country Club plans \$500,000 building program.

WASHINGTON—District Commissioners received low bid from Blake Construction Co. for addition to Adelaide Davis School, \$456,248.

FLORIDA

FLORIDA—Bureau of Budget, Washington, D. C., estimate for flood control for fiscal year 1952 includes following: Central and Southern Florida, \$6,500,000, and following for maintenance and improvement of existing river and harbor works, Jim Woodruff Dam, Part of Apalachicola, Chattahoochee and Flint Rivers System, Ga. and Fla., \$7,000,000; Canaveral Harbor, \$1,316,000; Intracoastal Waterway, Jacksonville to Miami, \$2,550,000, and Jacksonville Harbor, \$2,000,000.

CHATTAHOOCHEE—Florida State Improvement Commission let contract to Paul Smith Construction Co., Tallahassee, for pile driving, \$270,850.

COCOA—Department of the Army, Office of the Chief Engineer, Washington, D. C., announced funds have been appropriated for additional test facilities, Long Range Proving Ground, \$19,541,000.

CORAL GABLES—City let contract to Witters Construction Co., Hialeah, for Municipal Bus Terminal, \$270,850.

DADE COUNTY—Dade County Board of

Public Instruction, Miami, let contract to Bradford Builders, Inc., Miami Beach, for addition to Horace Mann Junior High School, \$164,528.

DADE COUNTY—Sanford Kay, Miami Beach, let contract to Sanford Kay Construction Co., Miami Beach, for 42-unit apartment building, \$225,000.

EL PORTAL—Rader Memorial Temple Methodist Episcopal Church, Inc., Miami, received low bid from St. John Co. for church building, \$234,900.

HOLLYWOOD—Allied Construction Co., Inc., Miami Beach, has contract for electronics plant, \$500,000.

JACKSONVILLE—W. T. Grant Co. plans store, \$500,000.

JACKSONVILLE—South Atlantic Pipe Lines, Inc., plans 25-mile natural gas line extending from Jacksonville to St. Petersburg, \$23,500,000.

JACKSONVILLE—Lehigh Portland Cement Co., Allentown, Pa., let contract to Duval Engineering and Contracting Co., Jacksonville, and Walsh Construction Co., New York, N. Y., for \$11,000,000 cement plant.

LAKELAND—Lakeland County Board of Public Instruction let contract to Ellis-Thompson, Tampa, for new senior high school, \$519,664.

MIAMI—Dade County Board of Public Instruction let contract to Bradford Builders, Inc., for addition to George Washington Carver Colored School, \$555,795.

MIAMI—Gust K. Newberg Construction Co., Miami, will construct 4 apartment buildings, 60 units total, \$24,000.

MIAMI—Board of Dade County Commissioners, County Port Authority, Miami International Airport, let contract to Troup Brothers, Inc., Miami, for 100-ft. utility runway, runway extensions and taxiways, Miami International Airport, \$998,179.

MIAMI—Board of Dade County Commissioners let contract to Edwin M. Fleming Construction Co., Bid Item No. 1 only, for psychiatric wing addition, Jackson Memorial Hospital, \$937,188.

MIAMI BEACH—All Souls in the Palms Church plans building, \$500,000.

NORTH DADE AND BROWARD COUNTIES—Corps of Engineers, Jacksonville, let contract to Hooper Construction Co., Coral Gables, for levees L-33 and L-37, \$1,270,862.

ORLANDO—Orange County Board of Public Instruction plans North and South Orlando High School, \$1,000,000.

PALM BEACH COUNTY—Corps of Engineers, Jacksonville, let contract to Robert Lee, Inc., Manning, S. C., for canal and levee L-1, \$1,317,262.

PANAMA CITY—Corps of Engineers, Mobile District, let contract to Wright Contracting Co., Columbus, Ga., for runway, taxiways, aprons, lighting facilities and storm drainage at Tyndall Air Force Base, \$1,241,035.

PANAMA CITY—Department of the Army, Office of the Chief Engineer, Washington, D. C., announced funds have been appropriated for airfield pavements, navigational aids, fuel facilities, fire station, utilities, Tyndall Air Force Base, \$3,572,000.

PENSACOLA—Armstrong Cork Co. let contract to Soule Construction Co. for most of the \$1,000,000 modernization and expansion program.

TALLAHASSEE—State Road Department received low bids for projects in following counties:

Walton—Rd. S-2A; Coggin & Deermont, Chipley, \$52,230.

Duval—Rds. A1A and 212; B. B. McCormick & Sons, Jacksonville, \$63,589.

Dade—Rd. 5; Troup Brothers, Inc., 4151 S. Dixie Hwy., Miami, \$362,268.

Broward—Rd. 9; H. E. Wolfe Construction Co., St. Augustine, \$577,261.

St. Johns—Rd. S-210; L. L. Hall Construction Co., Orange, \$86,544.

Marion—Rd. 25 and 300; Marion Construction Co., Ocala, \$492,823.

Lake—Rd. 50; H. E. Wolfe Construction Co., St. Augustine, \$117,096.

Pinellas and Hillsborough—Rd. 60; Clyde J. Keys, St. Petersburg, \$278,780.

Palm Beach and Martin—Rd. 5; Rubin Construction Co., Ft. Lauderdale, \$451,244.

Alachua—Rds. 248, 329 and 340; S. M. Wall, Gainesville, \$325,814.

Bay—Rd. 288; Caddell & Jackson, Jacksonville, \$205,463.

Hernando—One Brothers Construction Co., Tampa, \$170,651.

TALLAHASSEE—Florida State Improvement Commission plans neighborhood village for retired people, 500 units, \$3,000,000.

TAMPA—Florida State Tuberculosis Board, DelRay Beach, let contract to Arnold Construction Co., West Palm Beach, for South-West Florida Sanatorium, Drew Field, \$1,429,777.

TAMPA—Department of the Army, Office of

of the Chief Engineers, Washington, D. C., announced funds have been appropriated for airfield pavements, fuel facilities, communications facilities, fire station, MacDill Air Force Base, \$3,499,000.

WEST PALM BEACH—Corps of Engineers, Jacksonville, received low bid from Robert Lee, Inc., Manning, S. C., for canal and levee L-8, Palm Beach County, \$1,317,262.

GEORGIA

GEORGIA—Bureau of Budget, Washington, D. C., estimate for flood control for fiscal year 1952 includes following: Clark Hill Reservoir, Ga. and S. C., \$18,300,000, and Harwell Reservoir, Ga. and S. C., planning, \$200,000, and maintenance and improvement of existing river and harbor works of following: Buford Dam, Part of Apalachicola, Chattahoochee and Flint Rivers System, Ga. and Fla., \$900,000, and Savannah Harbor, \$370,000.

ATLANTA—State Highway Department received low bids for projects in following counties:

Jefferson and Richmond—4 bridges and approaches on Louisville-Augusta Rd.; Henry Newton, Decatur, \$50,465.

Richmond—4 bridges and widening another on Louisville-Augusta Rd.; H. M. Pafford, Jr., Waycross, \$346,983.

Clinch—bridge on Fazio-St. George Rd.; Scott Construction Co., Thomasville, \$263,184; **Jef Davis**—10.15 mi. pvt. and 3 bridges on Douglas-Hazlehurst Rd.; H. G. Smith, Fitzgerald, \$386,463.

Madison—17.64 mi. surf. treat. on 6 roads; E. H. Hines Construction Co., Greenwood, S. C., \$51,055.

Berrien—1.991 mi. pvt. and 2 bridges on Nashville-Tifton Rd.; H. G. Smith, Fitzgerald, \$151,049.

Dodge—6.337 mi. pvt. and 1 bridge on Milan-Chaucery Rd.; Coffee Construction Co., Eastman, \$87,572.

Effingham—5.261 mi. pvt. on Guyton-Oliver Rd.; J. G. Attaway Construction Co., Statesboro, \$60,600.

Spalding and Henry—5.090 mi. pvt. and 2 bridges on Griffin-McDonough Rd.; Hatcher and Morrow, Crawfordville, \$131,064.

Forsyth—3.274 mi. pvt. and 1 bridge on Hightower-Cool Mountain Rd.; J. E. Jordan Construction Co., Marietta, \$166,718.

Elbert and Madison—6.452 mi. pvt. and 1 bridge on Bowman-Corner Rd.; Veese and Weeks Construction Co., McCalister, \$233,823.

Walton—8.777 mi. pvt. on Gratiis-Camp-ton Rd.; F. M. Hines Construction Co., Inc., Greenwood, S. C., \$81,041.

Fulton—2.697 mi. grad. and bridge at N.C. & St. L. Railroad Spur; R. T. Smith, Atlanta, \$240,628.

ALBANY—Department of the Army, Office of the Chief Engineers, Washington, D. C., announced funds have been appropriated for fuel facilities, operations building, control tower, fire station, airfield pavements, utilities, Turner Air Force Base, \$1,744,000.

ATLANTA—St. Joseph's Infirmary let contract to Ralph W. Didschneit for hospital, \$835,387.

ATLANTA—Department of the Army, Purchasing and Contracting Office, let contract to George Munn for alterations and additions to Bldg. T-922, Atlanta General Depot, \$249,000.

ATLANTA—Y.W.C.A. plans new building, \$625,000.

ATLANTA—Coastal States Life Insurance Co. received low bid from Christian and Bell for building, \$294,445.

ATLANTA—Department of the Army, Office of the Chief Engineers, Washington, D. C., announced funds have been appropriated for building and maintenance shop, Atlanta General Depot, \$1,494,000.

AUGUSTA—Housing Authority let contract to Claussen and Webster for Sunset Homes Extension, No. Ga. 1-4, \$1,895,500.

AUGUSTA—First Baptist Church Congregation received low bid from J. C. Stockton & Son for educational building, \$303,973.

COMMERCE—City let contract to C. Y. Thomason Co., Greenwood, S. C., for water works and sewer improvements, \$483,383.

HAPEVILLE—Ford Motor Co., Dearborn, Mich., plans multi-million-dollar expansion of assembly plant; first phase will be addition to present building, \$1,000,000.

MACON—Department of the Army, Office of the Chief Engineers, Washington, D. C., announced funds have been appropriated for additional depot facilities, Robins Air Force Base, \$3,682,000.

SAVANNAH—City received low bids for sewer improvements, Dixie Construction Co., Savannah, \$288,000; for sewer lines, and Acme Construction Co., Mobile, Ala., for sewer plant, \$604,000.

SAVANNAH—Corps of Engineers, Post Office Building, let contract to Shafter Construction Co., Greensboro, N. C., for second stage rehabilitation of existing buildings, \$294,370.

SAVANNAH—Department of the Army, Office of the Chief Engineers, Washington, D. C., announced funds have been appropri-

Virginia Opens Bids for \$3,213,743 Road Projects

The Virginia Department of Highways on March 8 received bids totaling \$3,213,743 for furnishing and application of bituminous materials and application of state-owned covering material in the various districts. The projects follow:

Bristol District—Class B, Schedule 1, Adams and Tate Construction Co., Roanoke, \$24,399; J. R. Ford, Lynchburg, \$24,965;

Richmond District—Class B, Schedule 1, W. M. McIntosh, Inc., Richmond, \$90,287; Short and Thompson, Inc., Hopewell, \$93,095; Burton P. Short and Son, Petersburg, \$102,947;

Fredericksburg District—Class B, Schedule 1, W. M. McIntosh, Inc., Richmond, \$112,938;

Culpeper District—Class B, Schedule 1, Powell and Bolling, Sandston, \$179,815; W. M. McIntosh, Inc., Richmond, \$209,810; S. L. Williamson, Charlottesville, \$212,975; Robert T. Main, Salem, \$222,986;

Staunton District—Class B, Schedule 1, Walter N. Webber, Lynchburg, \$121,639; Carroll O. Stansbury, Clear Spring, \$124,419;

Bristol District—Class C, Schedule 1, Adams and Tate Construction Co., Roanoke, \$185,928; J. R. Ford Co., Inc., Lynchburg, \$214,527;

Bristol District—Class C, Schedule 2, Adams and Tate Construction Co., Roanoke, \$267,418; J. R. Ford Co., Inc., Lynchburg, \$277,130; Virginia Asphalt Paving Co., Inc., Roanoke, \$292,291;

Salem District—Class C, Schedule 1, Adams and Tate Construction Co., Roanoke, \$221,489; Virginia Asphalt Paving Co., Inc., Roanoke, \$223,285; Sam Finley, Inc., Roanoke, \$232,060;

Salem District—Class C, Schedule 2, Adams and Tate Construction Co., Roanoke, \$147,418; Sam Finley, Inc., Roanoke, \$155,553;

Lynchburg District—Class C, Schedule 1, Thompson-Arthur Construction Co., Greensboro, N. C., \$204,088; J. R. Ford

Co., Inc., Lynchburg, \$208,719;

Lynchburg District—Class C, Schedule 2, Virginia Asphalt Paving Co., Inc., Roanoke, \$205,328; J. R. Ford Co., Inc., Lynchburg, \$206,228; Thompson-Arthur Construction Co., Greensboro, N. C., \$210,261; Richmond District—Class C, Schedule 1, Burton P. Short and Son, Petersburg, \$157,331; W. M. McIntosh, Inc., Richmond, \$158,040;

Suffolk District—Class C, Schedule 1, Burton P. Short and Son, Petersburg, \$105,962; W. M. McIntosh, Inc., Richmond, \$109,180; Short and Thompson, Inc., Hopewell, \$109,853; Carroll O. Stansbury, Clear Spring, \$123,741;

Suffolk District—Class C, Schedule 2, Burton P. Short and Son, Petersburg, \$125,954; W. M. McIntosh, Inc., Richmond, \$130,808; Carroll O. Stansbury, Clear Spring, Md., \$131,518; Adams and Tate Construction Co., Roanoke, \$132,413;

Suffolk District—Class C, Schedule 3, Short and Thompson, Inc., Hopewell, \$223,794; W. M. McIntosh, Inc., Richmond, \$238,620; Adams and Tate Construction Co., Roanoke, \$245,047;

Suffolk District—Class C, Schedule 4, W. M. McIntosh, Inc., Richmond, \$134,819; Clyde R. Royals, Hampton, \$138,642; Adams and Tate Construction Co., Roanoke, \$141,810; Short and Thompson, Inc., Hopewell, \$142,591;

Fredericksburg District—Class C, Schedule 1, W. M. McIntosh, Inc., Richmond, \$151,390; Short and Thompson, Inc., Hopewell, \$155,378;

Culpeper District—Class C, Schedule 1, Powell and Bolling, Sandston, \$265,634; Richard F. Kline, Fredericks, Md., \$288,319; J. R. Ford Co., Inc., Lynchburg, \$298,347; W. M. McIntosh, Inc., Richmond, \$301,291; Robert T. Main Co., Salem, \$391,471; Arlington Asphalt Co., Rosslyn, \$303,006;

Staunton District—Class C, Schedule 1, Sam Finley, Inc., Roanoke, \$258,117; A. B. Torrence and Co., Inc., Elkton, \$262,062.

ated for airfield pavements, fuel facilities, communications facilities, fire station, Hunter Air Force Base, \$3,524,000.

THOMSON—Knox Georgia Homes, Inc., plans 55 duplex dwellings, \$467,500.

KENTUCKY

KENTUCKY—Congress authorized \$3,000,000 for Cumberland River, Kentucky and Tennessee, Cheatham Lock and Dam, Tennessee, for maintenance and improvement of existing river and harbor works.

KENTUCKY—Bureau of Budget, Washington, D. C., estimate for flood control for fiscal year 1952 includes following: Ashland, \$2,900,000; Covington, \$1,400,000; Hawesville, \$108,000; Jessamine Creek Reservoir, \$50,000 for planning; Louisville, \$4,500,000; Maysville, \$1,500,000, and Wolf Creek Reservoir, \$3,000,000; following for maintenance and improvement of existing river and harbor works, Lower Cumberland Dam, \$150,000 for planning; Ohio River Locks and Dam; Fernbank Lock and Dam, \$50,000 for planning, and Greenup Lock and Dam, \$50,000 for planning.

DANVILLE—Corning Glass Works, Corning, N. Y., let contract to Dittmars-Dickman-Pickens Construction Co., Muskogee, Okla., for excavation and preliminary work on proposed plant, \$2,000,000.

DANVILLE—City plans expansion of Municipal Waterworks, \$200,000.

FLEMINGSBURG—Fleming-Mason Rural Electric Cooperative Corp. plans 519 miles of distribution line and system improvements, \$960,000.

FRANKLIN—Corps of Engineers, New Orleans, received low bid from McWilliams Dredging Co., New Orleans, for uncompleted earthwork on East Atchafalaya Basin Protection Levee in St. Mary Parish, \$158,505.

GRAYSON—Grayson Rural Electric Cooperative Corp. plans 477 miles of distribution line and system improvements, \$1,000,000.

HOPKINSVILLE—Department of the Army, Office of the Chief Engineers, Washington, D. C., announced funds have been appropriated for barracks, Fort Campbell, \$3,600,000.

LEXINGTON—Department of the Army, Office of the Chief Engineers, Washington, D. C., announced funds have been appropriated for buildings, maintenance shop and hardstands, Lexington Signal Depot, \$1,844,500.

LOUISVILLE—Louisville Gas & Electric Co. authorized \$14,000,000 expenditures for extensions, renewals and additions; \$8,000,000 to be spent during 1951.

LOUISVILLE—Louisville and Nashville Railroad authorized \$13,000,000 for additional facilities including 67 more diesel locomotives.

LOUISVILLE—Congress authorized sum of \$707,000 for Mermentau River for flood control.

MAYFIELD—Graves County plans extension of sanitary sewer lines and treatment plant improvements, \$530,000.

PADUCAH—Air Reduction Co., Inc., New York, N. Y., plans calcium carbide plant, Calvert County, \$10,000,000.

FRENTONBURG—Floyd County Commissioners plan general hospital, \$1,110,000.

LOUISIANA

LOUISIANA—Bureau of Budget, Washington, D. C., estimate for flood control for fiscal year 1952 includes following: Mermentau River, \$707,000, and following for maintenance and improvement of existing river and harbor works: Pearl River, Miss., and La.,

(Continued on page 34)

Southern Construction Projects

LOUISIANA

(Continued from page 33)

\$987,000.

LOUISIANA—Congress authorized \$1,025,000 for Calcasieu River and Pass; Gulf Intracoastal Waterway between Apalachee Bay, Fla., and Mexican Border; \$4,900,000 for maintenance and improvement of existing river and harbor works.

LOUISIANA—Department of Highways, Baton Rouge, announced widening of existing highways will take lion's share of \$20,000,000 in improvements to Louisiana trunklines scheduled this year.

LOUISIANA—Gulf-Michigan Gas Transmission Corp., new firm formed by Mississippi River Fuel Corp., Stupp Bros. Bridge & Iron Corp., plans \$90,000,000 natural gas pipeline from Texas and Louisiana gas fields to Michigan City, Ind.; will be 700 miles long, capacity of 400,000,000 cubic feet of gas daily.

BATON ROUGE—Department of Highways let contract for projects in following parishes:

Caddo and Bossier—Rt. 109, substructure of bridge over Red River at Miller's bluff; Massman Construction Co. and Kansas City Bridge Co., Kansas City, Mo., \$1,391,000;

Caddo—0.228 mi. grad., drain, str., and Portland cement conc. pvt.; Caddo Contracting Co., Inc., Shreveport, \$82,434;

St. John the Baptist—7.70 mi. shaping and surf. shoulder with chisel, reef shell base course, bitum. mixture for cold application and bitum. surf. treat.; Barber Brothers Co., \$93,412;

East Baton Rouge—3.049 mi. grad., shaping roadway, shell drain, str., grav. base course and 3-application bitum. surf. treat.; Barber Brothers Co., \$85,349;

East Baton Rouge—3.192 mi. grad., small drain, str., conc. flat slab span bridges, soil cement base course, or as alternates, grav. or shell base course and bitum. surf. treat.; Barber Brothers Co., \$112,312;

Lafayette—1.630 mi. grad., aggr. type base course, conc. flat slab bridges and 3-application bitum. surf. treat.; T. W. Kleinpeter, \$122,312;

LaFourche—2.080 mi. grad., small drain, str., 6 1/2-in. ft. timber trestle and 1@45-ft. I-beam span bridge and aggr. surf. course; Carl E. Heck, Civil Engr. and General Contractor, Thibodaux, \$96,367;

Ouachita—1.114 mi. grad., small drain, str., and Portland cement conc. pvt.; T. L. James & Co., Inc., Ruston, \$218,193;

BATON ROUGE—Department of Highways received low bids for projects in following parishes:

Lincoln—0.887 mi. grad., drain, str., widening existing conc. pvt. and surf. with hot bitum. mixture; T. L. James & Co., Inc., Ruston, \$198,694;

Iberia—1.350 mi. grad., small drain, str., and Portland cement conc. pvt.; Central Construction Co., Inc., Monroe, \$304,473;

Washington—5.718 mi. grad., small drain, str., conc. slab span bridge, grav. base course, or as alternate, soil cement base course and bitum. surf. treat.; Henry & Hall, Dubach, \$291,686;

Cameron—12.885 mi. grad., shaping roadway, small drain, str., aggr. base course or as alternate, soil cement base course and bitum. surf. treat.; Barber Brothers Co., Baton Rouge, \$378,701;

Terrebonne and Lafourche—bridge over drainage canal, bridge over Minors canal over drainage canal, 40 arched canal, Rt. 2, I-beam span bridges and Portland cement pvt. approaches; Forcum-James Co., Box 911, \$144,905;

West Baton Rouge and Pointe Coupee—11.165 mi. grad., Portland cement conc. pvt. and widening existing conc. deck girder bridges; T. L. James & Co., Inc., Ruston, \$1,050,146;

BATON ROUGE—Louisiana State University received low bid from Dye and Mulliner, Columbia, Miss., for laboratory school and college of educational building, \$1,368,561;

BELLE CHASSE—Red Star Yeast & Products Co., Milwaukee, Wis., let contract to Farnsworth & Chambers, Houston, Tex., for \$1,500,000 yeast plant.

LAKE CHARLES—Lake Charles Memorial Hospital Association let contract to T. Mulliner and Sons for 100-bed Lake Charles Memorial Hospital, \$1,472,876.

MINDEN—Police Jury of Webster Parish plans \$1,000,000 Courthouse and Jail.

NEW ORLEANS—City plans grade separations in union passenger terminal program, \$7,000,000.

NEW ORLEANS—City plans paving, black-topping and other street improvements, \$5,900,000.

NEW ORLEANS—City plans improvements to city's sewerage, water and drainage system, \$5,000,000.

NEW ORLEANS—Delta Match Co., subsidiary of Swedish Match Co., plans \$2,000,000 factory.

NEW ORLEANS—Pan-Am Southern Corp. let contract to Lummus Co. in connection with \$6,500,000 expansion program.

SHREVEPORT—U. S. Engineer, Office, Little Rock, Ark., awarded contract to T. L. James & Co., Inc., Ruston, for additional concrete apron facilities, Barksdale Air Force Base, \$2,000,000; contract also let to Robert E. McKee, General Contractors, Inc., Dallas, Tex., for ammunition storage facilities, including blacktop roads, fencing and utilities, \$1,500,000.

SHREVEPORT—United Gas Pipe Line Co. let contract to Brown & Root, Inc., Houston, Tex., for 1,000 miles of pipeline in Texas, Louisiana, and Mississippi, \$111,000,000.

SHREVEPORT—Suburban Shreveport Housing Authority plans 750 housing units project, Barksdale Air Force Base, \$8,000,000.

MARYLAND

MARYLAND—Included in the State Budget recommended by Governor Theodore McKelvin are the following: Library, Maryland School for the Deaf, \$190,000; library, Frostburg Teachers College, \$400,000; demonstration building, Salisbury Teachers College, \$454,000; land and development, Coppin Teachers College, \$500,000; science building, land, and development, \$345,000; University of Maryland, \$1,560,000; poultry building, College Park, \$380,000; plans, library building, \$120,000; engine research laboratory, \$120,000; storage building, Baltimore, \$130,000; Department buildings, auditorium, \$650,000; Supply Depot, \$100,000; Department of Research and Administration, \$130,160; State Police Training School, \$250,000; \$400,000 for institution for Defective Delinquents in the second stage of construction.

Governor Theodore McKelvin recommended following: Boys' issues, \$1,040,000; Boys, \$250,000; cottage, Boys Village, \$125,000; Armories, \$400,000; fire prevention installations, \$589,475; Patapsco River Valley Park, land, development, \$900,000; Chronic Disease Hospital, Baltimore, \$500,000; Mental Institution land and buildings, \$338,000; staff quarters, Mount Wilson Hospital, \$200,000.

MARYLAND—Bureau of Public Roads, Arlington, Va., let contract to Camden Construction Co., Baltimore, \$396,504 for Baltimore, Washington Parkway, Project 1E2.

MARYLAND—Chesapeake and Potomac Telephone Co., Baltimore, plans expenditures of \$2,803,000 for improvement and expansion of telephone facilities throughout Maryland.

MARYLAND—Congress authorized \$800,000 for Baltimore Harbor and Channels, deepen channel.

MARYLAND—Congress authorized \$2,400,000 for Cumberland, Md. and Ridgeley, W. Va. flood control.

ANNAPOLIS—Westinghouse Electric Corp. awarded contract to Consolidated Engineering Co., Baltimore, for radar equipment plant at Friendship International Airport, Anne Arundel County, \$100,000,000.

ANNAPOLIS—Housing Authority let contract to Henry A. Knott, Inc. for housing project, Obery Court, \$565,400.

BALTIMORE—State Roads Commission let contracts for projects in following counties:

Worcester—3.439 mi. bitum. conc.; Eastern Highways Corp., Brooklyn, Md., \$362,445 for stone.

Aleghany—Screening foundation layer, macadam base, pene, macadam surf., 983 mi.; Cumberland Contracting Co., Cumberland, \$168,799.

BALTIMORE—Board of Estimates let contracts for following projects:

Contract No. 1101—Bitum. conc. surf.; Mahoney Brothers, \$144,701;

Contract No. 1103—Sheet asphalt, resurf.; American Paving & Contracting Co., \$130,192;

Contracting No. 1101—Bitum. conc. surf.; Contracting Paving, \$111,000; Contracting Co., \$129,608;

Contract 1104—Sheet asphalt, resurf.; Potts & Callahan Paving Co., Inc., \$144,195;

Contract No. 1105—Sheet asphalt, resurf.; Baltimore Asphalt Block & Tile Co., \$146,812;

Contract No. 1110—Sheet asphalt, resurf.; Arundel Construction Co., Inc., \$150,149;

Contract No. 1103—Sheet asphalt, resurf. and bitum. conc. surf.; P. Flanagan & Sons, Inc., \$143,966;

Contract No. 1108-AA—Cement conc.; Paramount Construction Co., Inc., \$132,024;

Contract No. 1109—Bitum. conc.; Mahoney Brothers, \$114,443.

BALTIMORE—Board of Estimates let contracts to William A. Harting, \$104,500 for Section A and Martin G. Imbach, Inc., \$488,906, for Light Street waterfront improvements, second stage.

BALTIMORE—Bureau of Public Roads, Arlington, Va., let contract to Bonwit Construction Co., New York, \$246,196, for Baltimore-Washington Parkway, Project 1G-2, 2 reinf. conc. str., and approaches.

BALTIMORE—Governor Theodore McKelvin asked for a separate loan of \$1,500,000 for laboratory for industrial research, Johns Hopkins University engineering school.

BALTIMORE—Board of Estimates plans \$12,000,000 loan for school construction.

BALTIMORE—Western Railway Co., let contract to Empire Construction Co. for \$12,000,000 pier at Port Covington.

BALTIMORE—City plans swimming pools, Gwynns Falls Park, Carroll Park and Cherry Hill, \$500,000.

BALTIMORE—General Refractories Co., plans \$2,000,000 expansion program; Baltimore Contractors, Inc., have general contract.

BALTIMORE—City Administration added \$10,000,000 for port improvements.

BALTIMORE—Board of Estimates let contract to DeLucia Construction Co., Inc., \$1,690,000 for new People's Court Building.

BALTIMORE—Senate passed bill to set up port of Baltimore commission and enable city to borrow up to \$30,000,000 for port improvements.

BALTIMORE—Board of Estimates received low bids from William A. Harting, \$104,500 for Section A and Victor A. Pyles Co., Inc., \$488,906 for Section B, for Light Street waterfront improvements, second stage.

BALTIMORE COUNTY—Baltimore County Commissioners plans \$18,000,000, five year school improvement and construction program; includes erection of 19 new schools and additions to 16 schools.

BALTIMORE—Board of Education received low bid from J. H. Williams & Co., Inc., Baltimore, \$744,000 for Luther-ville Elementary School.

CAMP SPRING—Department of the Army, Office of the Chief of Engineers, Washington, D. C., announced funds have been appropriated for airfield pavements, navigational aids, fuel facilities, barracks, shops, communications building, hangars, operations building, utilities, Andrews Air Force Base, \$7,472,000.

PINTO—Navy Department, Bureau of Yards and Docks, plans \$750,000 production development line, Alleghany Ballistics Laboratory.

TAKOMA PARK—Seventh Day Adventists plant church, \$400,000.

PRINCE GEORGE COUNTY—Bureau of Public Roads, Arlington, Va., let contract to Camden Construction Co., Baltimore, \$327,887 for Baltimore-Washington Parkway, Project 1F3.

MISSISSIPPI

MISSISSIPPI—Congress authorized \$773,000 for Harrison County Shore Protection, maintenance and improvement of existing river and harbor works.

BASSFIELD—Board of Trustees of Bassfield Consolidated School District let contract to Marvin L. Polk, Columbia, \$145,113 for 9-classroom Bassfield Elementary School and auditorium.

BILOXI—Board of Trustees of Biloxi Municipal Separate School District received low bid from J. C. McClendon, Jr., Gulfport, \$196,840 for Biloxi West End Elementary School.

CLEVELAND—City plans \$250,000 expansion of Baxter Laboratories plant.

GULFPORT—Mississippi Power Co. plans \$6,000,000 program for new construction in 1951.

HAYNESVILLE—Claiborne Parish School Board, Homer, sold \$250,000 bond issue to White, Hattler & Sanford of New Orleans, La., for new negro school and remodeling veteran school building.

HOLLANDALE—City plans Deer Creek Natural Gas District project, \$730,000.

HOLLY SPRINGS—Mayor and Board of Aldermen received low bid from George S. & Charles R. Volz Construction Co., Ripley, Tenn., \$205,810 on concrete pipe and \$207,572 for clay pipe for extensions to sanitary sewerage system and sewage disposal plant.

JACKSON—City let contract to Viking Construction Co., Houston, Tex., \$439,772 for sanitary sewers, manholes and necessary appurtenances.

JACKSON—City Commissioners let contract to Standard Auto Service, \$203,850 for two diesel engines for water pumping station.

JACKSON—City received low bid from Ike S. Reed, \$147,646 for sanitary sewers, manholes and necessary appurtenances in Crane Creek area.

MERIDIAN—State Building Commission

approved two convalescent homes, laundry, dining room at East Mississippi Hospital, \$970,000.

PUERTO RICO—Mayor and Board of Aldermen plan \$660,000 school building program.

MISSOURI

MISSOURI—Congress authorized \$2,300,000 for Missouri River, Kansas City to mouth for maintenance and improvement of existing river and harbor works.

MISSOURI—Corps of Engineers, Memphis, Tenn., let contract to McAlister-Davis Co., Pine Bluff, Ark., \$1,702,450 for reclamation at several localities on banks of Mississippi River between Pritchard and Cottonwood, Mo.

BERKELEY CITY—City let contracts for sanitary sewers and sewage treatment plant as follows: E. J. Fischer, section A, sewer lines, \$79,701; section B, \$85,764; section C, \$60,197; section E, \$58,097; N. O. Sied, \$122,982; R. & M Construction Co., section F, sewage treatment plant, \$104,500 and section J, lift station.

CAIRO—School District R-IV, Randolph County Board of Education, Huntsville, plans school improvements, \$286,000.

JEFFERSON CITY—State Highway Commission let contracts for projects in following counties:

Buchanan—137 GE. bridges, pavt.; Knutson-Gould Construction Co., Kansas City, \$96,045;

Clay—3,521 ml. GE. bridge and surf.; Midwest PreCote Co., St. Joseph, \$63,392;

Laclede—3,993 ml. GE. & pavt.; O'Dell & Riney Construction Co., Kirkwood, \$250,567;

Webster—4,923 ml. GE. & pavt.; O'Dell & Riney Construction Co., \$37,037;

Webster—4,937 ml. GE. & pavt.; O'Dell & Riney Construction Co., \$286,434;

Platte—4,052 ml. widen. and resurf.; Reno Construction Co., Overland Park, Kansas, \$166,383, Alt. No. 2;

Platte—4,804 ml. widen. and resurf.; Reno Construction Co., \$188,947, Alt. No. 2;

Linn, Sullivan—Div. 2, Group I, 25,104 ml. oiled surf.; St. Joseph Fuel Oil & Manufacturing Co., St. Joseph, \$59,730;

Carter, Douglas, Howell, Oregon and Ripley—Div. 9, Group I, 18,084 ml. oiled aggregate, surf.; Rock Hill Asphalt & Construction Co., Clayton, \$85,046.

KANSAS CITY—Union Wire Rope Corp. plans \$2,000,000 expansion of plant.

KANSAS CITY—Kansas City Power & Light Co. plans 3 new units, \$1,000,000.

KANSAS CITY—St. Luke's Hospital plans additions, \$2,241,000.

LADUE—Grove Laboratories, Inc., let contract to Frulin-Colton Contracting Co., St. Louis, for office and manufacturing plant, \$1,900,000.

LAKE CITY—Remington Arms Co. plans reactivating plant for manufacture of small arms ammunition, \$4,250,000.

SAINTE GEORGE—Citizens Electric Corp. plans 62 miles of distribution line, system improvements, and completion of previously approved construction, \$1,360,000.

ST. LOUIS—City plans \$6,475,000 street improvements.

ST. LOUIS—City plans sewer improvement program, including first and second stages of the planned improvements of Rivre des Peres foul water sewer, \$7,800,000.

ST. LOUIS—City plans remodeling administration and ward buildings, City Hospital, \$850,000.

ST. LOUIS—City, Zoological Board of Control, plans improvements to Zoo, Forest Park, \$850,000.

ST. LOUIS—Corps of Engineers, Missouri River Div., Omaha, Neb., plans AG. F. B. location Center, \$12,900,000.

ST. LOUIS—Hilton Hotels Corp. plans improvement of Jefferson Hotel, \$1,500,000.

ST. LOUIS—Corps of Engineers, Kansas City District, let contract to Alport-Carlo Construction Co., \$1,708,999 for rehabilitation work in the A.A. Building.

ST. LOUIS—Jewish Hospital plans expansion, \$4,000,000.

ST. LOUIS—Monsanto Chemical Co. plans \$20,000,000 expenditure to increase its output.

UNIVERSITY CITY—City plans \$175,000 bond issue for repairing and improving the public buildings housing city offices.

UNIVERSITY CITY—Board of Education plans two elementary schools, \$1,350,000.

UNIVERSITY CITY—City plans constructing, extending and improving public sewers, \$700,000.

NORTH CAROLINA

NORTH CAROLINA—Congress authorized \$17,000,000 for Buggs Island reservoir, Va. and N. C., for flood control.

ASHEBORO—Randolph Electric Membership Corp. plans 110 miles of distribution line, system improvements and completion of previously approved construction, \$500,000.

ASHEVILLE—City plans \$2,750,000 bond issue for reservoir in North Fork Watershed and 16-inch water line to West Asheville.

BIRGAW—Four-County Electric Membership Corp. plans 32 miles of distribution line, transmission facilities, system improvements and completion of construction having prior approval, \$2,185,000.

CAMP LEJEUNE—Public Works Office, Naval Base, let contract to C. D. Spangler Construction Co., \$6,473,000 for housing project.

CHARLOTTE—City plans four schools, \$1,000,000.

CHARLOTTE—6th Naval District, Naval Base, let contract to C. D. Spangler Construction Co., for 1,054 unit housing project, \$6,473,000.

CHARLOTTE—Memorial Hospital Authority, Inc., let contract to Goode Construction Co., \$123,279 for addition.

DURHAM—City plans to spend \$200,000 for two fire stations; \$500,000 for police building; \$185,000 for stadium seats and dressing rooms at Durham Athletic Park; \$140,000 for other recreation improvements.

DURHAM—City plans \$2,225,000 sewer plant improvements; \$500,000 additional sewer pipes.

HICKORY—Board of Trustees of Hickory City Administrative Unit, let contract to F. S. West Construction Co., Statesville, \$694,000 for Junior high school.

LEANSVILLE—Board of Trustees let contract to Crosland Construction Co., Columbia, S. C., \$493,424 for Central High School.

ORANGE COUNTY—Local Government Commission, Raleigh, sold \$750,000 bond issue to Equitable Securities Corp. Trust Co. of Georgia, Inc., F. F. Cragle & Co., for school improvements.

SALISBURY—Housing Authority plans 3 housing projects, \$1,500,000.

SELMA—City Board of Education, Pittsboro, let contract to East Carolina Construction Co., Dunn, \$102,700 for high school.

WINSTON-SALEM—Negro YM-YWCA plans new building, \$500,000.

WINSTON-SALEM—Board of County Commissioners received low and only bid from Frank L. Blum Co., Winston-Salem, \$576,689 for City County Jail.

OKLAHOMA

OKLAHOMA—Congress authorized \$400,000 for Denison Reservoir, \$2,400,000 for Fort Gibson Reservoir and \$3,800,000 for Tenkiller Ferry Reservoir, for flood control.

OKLAHOMA—Bureau of Budget, Washington, D. C., estimate for flood control for fiscal year 1952 includes following: Eufaula Reservoir, \$30,000 for planning; Keystone Reservoir, \$100,000 for planning; Markham Ferry Reservoir, \$50,000 for construction.

END—Corps of Engineers, Tulsa, let contract to J. Briscoe, Stillwater, \$147,152 for additional parking aprons and taxiways, Vance Air Force Base.

OKLAHOMA CITY—City received low bid from J. C. Carpenter, \$61,865 for fire station No. 17.

OKLAHOMA CITY—Oklahoma Gas & Electric Co. approved \$8,250,000 generating station, 38,000 kw., transmission lines and substations, \$2,526,000; other transmission lines and substations, \$3,596,267; additions and improvements to lines, \$5,116,140; and structures, transportation equipment and miscellaneous, \$628,820, total, \$20,171,227.

OKLAHOMA CITY—Corps of Engineers, Tulsa, plans propellant fuel storage facilities installation, \$175,000, and radar facilities of a ground control approach system and an airport surveillance system, Tinker Air Force Base, \$155,000.

VINITA—Catholic Church plans building, \$75,000.

VINITA—State Board of Affairs, Oklahoma City, received low bid from Love Brothers, Vinita, \$99,750 for 6 physicians cottages.

SOUTH CAROLINA

AIKEN—Aiken Electric Cooperative, Inc. received low bid from Aldrick Electric Construction Co., \$299,144, for Project S. C. 14A.

BISHOPVILLE—Reeves Brothers, Inc., New York, N. Y., plan \$2,000,000 finishing plant.

CHARLESTON—Corps of Engineers, plans airplane fuel storage plant, \$1,500,000.

CHARLESTON—Hewitt Oil Co., plans oil terminal on Cooper River, \$500,000.

COLUMBIA—Housing Authority received low bid from M. B. Kahn Construction Co., \$2,522,000, for low rent housing project, SC 2-3.

COLUMBIA—Board of Trustees, University of South Carolina, received low combination bid from M. B. Kahn Construction Co. for engineering laboratory Bldg. No. 1, science Bldg. No. 2.

COLUMBIA—Board of School Commissioners let contract to J. R. Holcombe, \$224,900 for Denny Terrace School and T. E. Moore, Taylor Bldg., \$263,500 for Jackson Heights School.

(Continued on page 36)

All Turnpike Roadbed Awards Slated by July

The Oklahoma Turnpike Authority expects to have all of the roadbed of the 88-mile Turner Turnpike between Oklahoma City and Tulsa under contract by July 1, says Manager H. E. Bailey.

Mr. Bailey announces the authority will open bids during April on 22 miles, including structure work.

Sixteen miles will be let in Oklahoma county and six in adjoining Lincoln county.

Approximately five and a half miles are in construction in Creek county adjoining Lincoln.

When the Oklahoma and Lincoln county jobs are let the authority will have more than a fourth of the distance on the \$31,000,000 project in contract stage.

Manager Bailey denied reports that the authority had decided on the type of paving the road will carry.

He said three types are to be considered, Portland cement, asphaltic concrete and the flexible base kind.

The question of materials, shortened by the step-up in the national defense program, is not worrying the authority, Manager Bailey says.

"We do not believe we will have any difficulty in obtaining materials," the manager says.

Bituminous Surface Costs \$3,183,758 in Virginia

Contracts totaling \$3,183,758 were awarded last month by the Virginia State Highway Commission for the bituminous resurfacing of 2,000 miles of primary and secondary highways this Summer.

The awards covered the furnishing and application of 9,340,000 gallons of bituminous materials and 386,696 tons of gravel or stone chips for covering material.

Contractors given awards were:

W. M. McIntosh, Richmond, \$489,436; Adams and Tate Construction Co., Roanoke, \$846,654; Powell and Bolling, Sandston, \$445,450; Walter N. Webber, Lynchburg, \$121,640; Thompson-Arthur Construction Co., Greensboro, N. C., \$204,089; Virginia Asphalt Paving Co., Roanoke, \$205,328; Burton P. Short and Son, Petersburg, \$389,248; Short and Thompson, Hopewell, \$223,795; and San Finley, Inc., Roanoke, \$258,118.

The work is part of a \$6,000,000 rehabilitation program calling for the complete resurfacing of some 3,500 miles and the patching of many short sections of broken pavements. Additional contracts totaling \$1,270,834 were awarded in February for furnishing 10,576,000 gallons of material to be applied by State forces.

Frequent freezes and thaws during the winter will necessitate a much larger patching and repair program than was anticipated when the year's work was planned earlier in the Winter, highway engineers said. This will probably result in a decrease in the mileage of new bituminous surfaces, they added.

Virginia has more than 20,000 miles of hard surfaced highways, most of which have a bituminous surface requiring re-treatment every five to seven years.

Southern Construction Projects

SOUTH CAROLINA

(Continued from page 35)

CONWAY—Board of Education plans elementary school, \$300,000.

DRAYTON—Drayton Division of Deering-Miliken and Co. started work on a five-way expansion and modernization program, \$500,000; Daniel Construction Co., Greenville, general contractor.

FORT JACKSON—Corps of Engineers, Savannah, Ga., let contract to Carolina Construction Co., Columbia, \$373,340 for rehabilitation of site facilities.

GREENVILLE—Board of Trustees, Parker School District, let contract to Industrial Builders, Inc., Anderson, \$241,270 for San Souci Junior High School.

GREENVILLE—Board of Trustees, Parker School District, let contract to Triange Construction Co., \$226,170 for Judson Junior High School.

GREENVILLE—Greenville County Commissioners sold \$896,000 Greenville County Hospital bond issue to syndicate composed of Harris Trust and Savings Bank, R. S. Dickson & Co. and A. M. L. Co.

GREENVILLE—Housing Authority received low bid from Daniel Construction Co., \$2,680,000, for housing project.

GREENVILLE—Greater Greenville Sewer District Commission let contracts for sewerage system improvements as follows: Division 1, A. H. Gulon & Co., Inc., Charlotte, N. C., \$1,015,280; Division 2, Peden Construction Co., Greenville, \$357,676; Division 3, Glenn Construction Co., Charlotte, N. C., \$197,912.

GREENVILLE—Department of the Army, Office of the Chief Engineers, Washington, D. C., announced funds have been appropriated for airfield pavements, fuel facilities, communications facilities, Greenville Air Force Base, \$294,000.

GREENWOOD—City Public Works Commissioners let contract to G. E. Moore Co., \$141,287 for clear water well.

NEWBERRY—Newberry College let contract to G. Shockley Construction Co., Columbia, \$168,688 for library.

NORTH AUGUSTA—North Augusta School District 6 received low bid from Clarence Mobley Contracting Co., Augusta, Ga., \$133,761 for gymnasium and lunch room.

SUMTER—Department of the Army, Office of the Chief Engineers, Washington, D. C., announced funds have been appropriated for airfield pavements, navigational aids, fuel facilities, operations building, communications facilities, Shaw Air Force Base, \$1,235,000.

SUMTER—Corps of Engineers received low bid from Espy Paving & Construction Co., Savannah, Ga., \$188,127 for extension of runway and taxiway, Shaw Air Force Base.

SUMTER—Corps of Engineers, South Atlantic Division, Atlanta, Ga., received low bid from Cooper Agency, Inc., Columbia, \$1,197,000 for 500 unit housing project, Shaw Air Force Base.

WALTERBORO—First Baptist Church Congregation received low bid from George L. Fuller, Augusta, Ga., \$350,000 for church building.

TENNESSEE

TENNESSEE—Congress authorized \$480,000 for Center Hill Reservoir, \$500,000 for Dale Hollow Reservoir, Tenn. and Kentucky and \$750,000 for Memphis, Wolf River and Nonconah Creek, for flood control.

ABILENE—Board for Texas State Hospitals and Special Schools, Austin, received low bid from Rose Construction Co., \$174,900 for patient dormitories and equipment, Abilene State Hospital.

CHATTANOOGA—Hamilton County Board of Education received low bid from T. U. Parks Co., \$195,898 for new East of Ridge School on Spruce Creek.

CHATTANOOGA—Board of Education received low bid from John Martin Co. for John H. Allen School, \$225,000.

CHATTANOOGA—Tennessee Products and Chemical Corp. plans two-year, \$7,000,000 expansion program; includes \$3,500,000 for chlorine plant, work to start immediately; other projects include \$478,000 for expansion of company plants at Chattanooga; \$37,681 for the ferro alloy division; \$141,264 for Whitwell Mine; \$1,144,156 for increasing production at the Wrigley plant; \$50,000 for the mineral wool plant; and \$300,000 for repairing furnaces.

CHATTANOOGA—Negro school on South Market St. planned, \$2,000,000.

CLARKSVILLE—Housing Authority let contract to Clark Construction Co., Owensboro, Ky., \$1,741,203, for projects Tenn. 10-1 and Tenn. 10-2.

KNOXVILLE—Electro Manganese Corp. plans chemical plant, \$1,000,000.

KNOXVILLE—Department of the Army, Office of the Chief Engineers, Washington, D. C., announced funds have been appropriated for airfield pavements, navigational aids, fuel facilities, operations building, communications facilities, hangars, barracks, fire station, dispensary, utilities, McGhee-Tyson Airport, \$3,857,000.

MEMPHIS—Memphis View Cooperative Homes, Inc., plan \$6,000,000 housing development.

MEMPHIS—Wyeth, Philadelphia, Pa., subsidiary of American Home Products Corp., plans \$150,000 warehouse.

NASHVILLE—State let contract to Foster and Creighton, Nashville, \$7,576,000 for State Office Building.

NASHVILLE—Housing Authority let contract to Cowan Lumber & Planing Mill Co., \$1,640,000 for 200 unit low rent housing project.

NASHVILLE—City plans \$2,000,000 water works improvement.

NASHVILLE—State let contract to Rock City Construction Co., \$2,145,000 for library.

OAK RIDGE—Atomic Energy Commission let contract to John A. Johnson & Sons, \$1,075,290 for Y-12 laboratory building No. 9995.

OAK RIDGE—U. S. Atomic Energy Commission let contract to Carl S. Helrich, Oak Ridge, \$1,172,133 for addition to Bldg. 9212.

OAK RIDGE—U. S. Atomic Energy Commission received low bid from Anderson Bros., Denver, Colorado, \$674,405, for rehabilitation of temporary dwelling units.

MYRA—Department of the Army, Office of the Chief Engineers, Washington, D. C., announced funds have been appropriated for airfield pavements, navigational aids, fuel facilities, Sewart Air Force Base, \$3,063,000.

TULLAHOMA—U. S. Engineer Office let contract to Robert E. Maxey Construction Co., Lubbock, Tex., \$295,800 for electrical distribution control building, Arnold Engineering Development Center.

TULLAHOMA—U. S. Engineer Office let contract to Robert E. Maxey Construction Co., Lubbock, Tex., \$2,500,000 for administration and engineering building, Arnold Engineering Development Center.

TEXAS

AMARILLO—U. S. Atomic Energy Commission, Los Alamos, N. M., let contract to Walden, Fulton and Payne, Lubbock, \$1,108,005 for administration building, transportation shops, new ramps, and modifications to existing ramps, Pantex Plant.

BIG SPRING—Colorado River Municipal Water District let contract to J. V. Moorhead & Sons, Wylie, \$1,452,877, for earthen dam.

BIG SPRING—Department of the Army, Office of the Chief Engineers, Washington, D. C., announced funds have been appropriated for airfield pavements, fuel facilities, operations building, administration buildings, communications building, recreation storage, training facilities, navigational aids, barracks, dispensary, utilities, Big Spring Municipal Airport, \$13,822,000.

DALLAS—Simmons Co. let contract to the Austin Co., Houston, for one-story manufacturing, office and warehouse building, \$780,000.

DALLAS—Baptist Church Congregation plans church building, \$910,000.

DALLAS—Rae H. Skillern and Associates plan modern shopping center, \$750,000.

EL PASO—Department of the Army, Office of the Chief Engineers, Washington, D. C., announced funds have been appropriated for fuel facilities, communications facilities, Bigges Air Force Base, \$1,367,000.

EL PASO—Department of the Army, Office of the Chief Engineers, Washington, D. C., announced funds have been appropriated for buildings, and firing facilities, Fort Bliss, \$1,865,725.

ENNIS—Housing Authority plans 90 unit housing project, \$826,722.

ERATH—Southwestern Public Service let contract to Missouri Valley Constructors, Amarillo, \$2,000,000.

FORT WORTH—Corps of Engineers received low bid from Russ Mitchell Inc. and Bruce Construction Co., \$2,198,312 for power house switchyards and other facilities at \$42,000,000 Whitney Dam and Reservoir project.

GALVESTON—University of Texas, Austin, plans four-story tuberculosis hospital, University of Texas Medical Branch, \$6,000,000.

GOOSE CREEK—Goose Creek Independent School District plans school improvements, \$2,795,497.

HOUSTON—Harris County let contract to Farnsworth & Chambers Co., Inc., \$3,500,000 for Atascocita Road and San Jacinto River bridge.

HOUSTON—Houston Lighting and Power Co. plans 3 new 100,000 kilowatt generating

units in 1932 and 1953; will increase 1949-53 construction budget from \$80,000,000 to \$111,400,000.

JACKSONVILLE—Jacksonville Independent School District plans approved \$850,000 school improvement program.

KINGSVILLE—Naval Department, New Orleans plans construction program, Naval Air Station, \$1,100,000.

LAREDO—City plans \$3,305,000 water-works system.

LAVERGUE—LaVega Independent School District, Belmead Branch, Waco, plans \$640,000 school buildings.

MCALLEN—City plans expansion of Municipal Hospital, \$1,000,000.

MCALLEN—City let contract to Brown & Root, Inc., \$1,995,508, for city wide street improvement project.

MEXIA—Board for State Hospitals and Special Schools let contract to W. W. Walton Co., Tyler, \$746,938 for ward buildings, kitchen and dining hall for State School.

MIDLAND—Hotel Scharbauer let contract to Gene Brewer, for 5 story addition to hotel, \$1,000,000.

ODDESSA—Odessa College plans expansion, \$750,000.

PORT ARTHUR—Corps of Engineers, Galveston, let contract to Gulf & Pacific Dredging Co., Houston, \$644,721, for dredging Sabine River.

PORT LAVACA—Aluminum Company of America, Pittsburgh, Pa., let contract to American Bridge Co., Pittsburgh, Pa., for furnishing and erecting structures, for plant expansion, \$15,000,000.

SAN ANTONIO—Housing Authority let contract to Gilbert Falbo Co., for housing project for Latin-Americans, Tex. 6-8, \$1,594,542.

SNYDER—Scurry County plans farm to market roads, \$2,500,000.

SNYDER—Colorado River Municipal Water District water line, \$600,000.

TEMPLE—Temple Independent School District received low bid from E. E. Norgard & Shaw, Dallas, \$1,020,064 for colored junior-senior high school.

VIRGINIA

VIRGINIA—Congress authorized \$2,940,000 for Philpott Reservoir for flood control.

VIRGINIA—Department of Highways, Richmond, announced allocation of \$23,500,000 for fiscal year 1951-52 for improvements on secondary roads.

VIRGINIA—\$50,000,000 turnpike is planned across Southwest Virginia from West Virginia to North Carolina line.

VIRGINIA—Virginia State Board of Education approved expenditures of \$1,678,580 for new school facilities in seven counties and three cities.

ARLINGTON—Board of Education received low bid from E. L. Daniels & Co., \$1,600,000 for Washington-Lee Senior High School.

BEDFORD AND BOTETOURT COUNTIES—Bureau of Public Roads, Arlington, let contract to Hinkle Construction Co., Paris, Ky., \$358,135, for Blue Ridge Parkway.

CHATHAM—State Highway Department, Richmond, will spend \$777,000 in improving 7 primary roads in Pittsylvania County.

COVINGTON—Harry S. Truman, President, included in recent budget \$175,000 for Gathright-Falling Spring project on Jackson River; total cost, \$230,300,000.

FORT BELVOIR—Department of the Army, Office of the Chief Engineers, Washington, D. C., announced funds have been appropriated for technical facility buildings, \$1,945,700.

HENRICO COUNTY—Board of Education, Richmond, let contract to Grady Construction Co., Altavista, \$1,057,740 for Highland Springs High School.

LEESBURG—Loudoun County School Board plans \$1,430,897 school construction program.

LEXINGTON—Virginia Military Institute received low bid from John P. Pettjohn & Co., Lynchburg, \$741,302 for science building.

MARION—Dr. J. E. Barrett, Richmond, received low bid from English Construction Co., Altavista, \$1,022,000 for receiving building, Southwest State Hospital.

NORFOLK—Norfolk District of Corps of Engineers has \$32,637,000 of which \$30,500,000 is for flood control and \$2,137,000 for rivers and harbor operations, including \$25,500,000 for continuance of work on Bugis Island dam and reservoir project on Roanoke River in Virginia and North Carolina.

NORFOLK—Norfolk Redevelopment and Housing Authority plans second 1,500 unit phase of public housing program; part of \$40,000,000 slum clearance.

PETERSBURG—Council plans \$1,500,000 sewage treatment plant.

PORTSMOUTH—Board of Education let contract to Irons and Reynolds, Washington, D. C., \$2,286,087 for Norcom High School.

RICHMOND—Fredericksburg Natural Gas Corp. plans natural gas in Fredericksburg; to be piped from Transcontinental Gas Corp. lines at Louisiana, and to spend \$800,000 in next five years.

RICHMOND—Virginia Electric and Power Co. plans 1951 construction budget of \$12,563,100; \$6,000,000 for 100,000 Kw addition to Chesterfield power station, on James River near Richmond; \$10,000,000 for 60,000 kilowatt addition to Fossitt Point Power station, near Quantico; \$5,000,000 for transmission lines between Chesterfield and Suffolk, Chesterfield and Fossitt Point, and Aoshoke and Plymouth, N. C.; \$11,000,000 for extending distribution lines and improving existing facilities.

WARRENTON—Department of the Army, Office of the Chief of Engineers, Washington, D. C., announced funds have been appropriated for barracks, Vint Hill Farms, \$1,047,200.

WILLIAMSBURG—Navy Department, Public Works Office, Norfolk, received low bid from J. Kennon Perrin Co., Richmond, \$484,336, for training facilities for cargo handling battalions, Naval Supply Center.

WOODBRIDGE—District Engineer let contract to F. H. Martell Co., Washington, D. C., \$1,601,800 for Army Transmitting Station.

WEST VIRGINIA

CHARLESTON—Baldwin Supply Co. plans restaurant, \$400,000.

MORGANTOWN—City plans airport facilities, \$175,000, and roads and utilities, \$70,000.

NEW HAVEN—Vanadium Corp., Niagara Falls, N. Y., \$1,000,000 silicon alloys plant near New Haven in Mason County.

LaPlant-Choate Adds to Equipment Line

Two new additions to their line of earth-moving equipment were recently announced by John W. Schoen, vice-president and sales manager of the LaPlant-Choate Mfg. Co., Inc., Cedar Rapids, Iowa.

After extensive testing, the TS-200 motor scraper has been placed into production. This unit is a self-propelled, rubber-tired, high-speed earthmover of 9 to 12 yard capacity. Powered by a Buda diesel engine (Model 4-DC-645) of 145 H.P., it has a top speed of 23.44 MPH with standard transmission. With optional transmission, top speed is increased to 27.4 MPH. Ease and safety of operation through the use of double acting hydraulic steering, and large four wheel air brakes is assured. The unit is equipped with 21.00 x 25 20 ply tires, in addition to being steered hydraulically, the scraper is also controlled by hydraulics. A dual fluid power unit is used to provide the power. Shipping weight of the complete unit is 34,000 lbs.

The second unit added to the line is the TW-300 Motor Wagon. This unit is powered by a Buda supercharged Diesel of 225 H.P. Top speed is 21.2 MPH. Capacity of the Wagon is 14 yards struck—19 yards heaped. Doors are hydraulically controlled. Standard tire equipment is 24.00 x 29 24 ply. The tractor unit of the TW-300 is identical to the unit used with the TS-300. Shipping weight of the Wagon only when used to convert a motor scraper in the field to wagon use is 24,170 lbs. The complete TW-300 weighs 45,360 lbs.

New 5 1/2-Yard Shovel

A new 5 1/2-yard shovel, crane and dregline—Model 4500—has been added to the line of Manitowoc Engineering Works, Manitowoc, Wis. Especially designed for mobility, this machine has air controls for all operating clutches and brakes, straight Diesel power and crawler drive which make it adaptable for any locality or terrain.

Unusual ease of movement from job to job is a special feature possible because major dismantling is not required. Loading or unloading from trailer or flat car can be done in three to five days according to the manufacturer, with the machine handling its own heavy components.

On the job, travel speed is .77 miles per hour, with ground, bearing pressures are as low as 9.6 pounds per inch. Standard crawlers are 25 feet 9 inches long and 21 feet wide with choice of 48 inch or 60 inch pads. Steering is air controlled from the operator's cab through jaw type clutches.

Shovel booms are available in lengths of 38 feet-6 inches with 27 foot stick and 5 1/2 yard dipper; 50 foot with 37 foot stick and 5 yard dipper; or 60 foot boom with 45 foot stick and 4 1/2 yard dipper. Dipper stick is a single tubular unit which rolls through the saddle on concave rollers. It is free to turn and does not transmit twisting stresses to the boom.

Two-Day Texas Opening Sees \$8,961,559 Low Bids

The March 21 and 22 opening of the Texas State Highway Department resulted in low bids totaling \$8,941,559 for forty-eight projects. Listed by counties, they are:

Crocket County—Project No. R 538-11-1, RM 33, 11.847 miles grading, structures, foundation course, surface treatment; Strain and Brown, Inc., San Angelo, \$95,334;

Parker County—Project No. S 1469-1-1, FM 1545, 2.270 miles grading, structures, base and surfacing; John F. Buckner and Sons, Cleburne, \$33,604;

Bosque County—Project No. S 1417(1), FM 182, 6.818 miles grading, structures, base and surfacing; Worth Construction, Fort Worth, \$40,951;

Harris County—Project No. FI 466(19), U.S. 75, 6.193 miles concrete pavement; Gulf Bitulithic, Houston, \$847,634;

Madison County—Project No. F 51(3), U.S. 75, 12.774 miles hot mix asphalt concrete pavement; Gaylord Construction Co., Houston, \$299,907;

Falls and Limestone Counties—Project No. F 1092(5) and (6), SH 7, 14.366 miles flexible base and two-course surface treatment; Thomas and Ratliff, Rogers, \$258,094;

Ellis County—Project No. F 592, U.S. 37, 3.871 miles foundation course, flexible base and two-course surface treatment; John F. Buckner, Cleburne, \$119,274;

Hardeman County—Project No. F 501(5), U.S. 287, 13.162 miles grading, foundation course and hot mix asphalt concrete pavement; Ernest Loyd, Fort Worth, \$359,901;

Gray County—Project No. S 1212(3), SH 70, 6.157 miles grading, structures, flexible base and two-course surface treatment; John F. Buckner, Cleburne, \$192,238;

Medina County—Project No. F 270(13), U.S. 90, 5.410 miles grading, structures, flexible base and asphalt concrete surface; E. E. Hood and Sons, San Antonio, \$309,780;

Jackson County—Project No. R 1090-3-1, FM 616, 8.824 miles grading and structures; Holland Page, Austin, \$47,182;

Knox County—Project No. R 1512-1-1, FM 1587, 5.944 miles grading, structures, base and surfacing; Strain and Brown, San Angelo, \$70,886;

Kerr County—Project No. R 1135-3-1, FM 1341, 10.052 miles grading, structures, base and surfacing; E. E. Hood and Sons, San Antonio, \$68,992;

Calhoun County—Project No. C 179-10-21, SH 35, repairs to fender system; John F. Buckner, Cleburne, \$50,348;

El Paso County—Project No. C 167-2-10, U.S. 54, 3.256 miles hot mix asphalt concrete pavement resurfacing; Vowell Construction Co., El Paso, \$25,982;

Jefferson County—Project No. C 667-1-8, SH 347, concrete pavement and structures; Harrison Engineering and Construction Co., Kansas City, Mo., \$174,721;

Reagan, Tom Green, Schleicher and Menard Counties—Project Nos. C 76-8-8, etc., U.S. 67 and S.H. 151, mixed in place bituminous concrete and seal coat; Ned B. Hoffman, Fort Worth, \$78,480;

Tarrant County—Project No. R 1330-

2-1, FM 1187, 4.546 miles grading, structures, base and surfacing; E. R. Reel, Tyler, \$29,383;

Deaf Smith County—Project No. RV 1491-1-1, 37.447 miles grading, structures, base and surfacing; Bell, Braden, Barker and Gilvin, \$312,332;

Palo Pinto and Eastland Counties—Project C 7-7-66 and C 288-3-2, SH 16, 4.816 miles flexible base and two-course surface treatment; Cage Brothers, San Antonio, \$54,991;

Fayette, Wharton and Colorado Counties—Project Nos. C 114-8-11, C 240-2-9, etc., SH 237, 60, 71, 159, U.S. 77 and FM 109 and 442, 67.161 miles seal coat; D. and H. Construction Co., Dallas, \$63,562;

Ellis County—Project No. V 1160-1-3 and V 1139-1-6, FM 877 and 813, 14.466 miles surfacing; Ned B. Hoffman, Fort Worth, \$32,511;

San Jacinto County—Project No. C 395-2-7, SH 150, 14.864 miles reconditioning flexible base and single asphalt surface treatment; John F. Buckner and Son, Cleburne, \$42,219;

Lynn, Garza, Lamb, Floyd, Castro, Terry, Swisher, Bailey and Hockley Counties—Project Nos. C 53-5-5, etc., U.S. 83, 70, 380, 62, SH 51, 86, 214, FM 395, 301 and Spur 9, 146.452 miles seal coat; C. Hunter Strain, San Angelo, \$165,352;

San Patricia, Bee, Nueces, Goliad, Karnes and Kleberg Counties—Project Nos. C 87-3-8, C 87-5-5, etc., U.S. 59, 181, SH 44, 29, 72, 80 and 141, 39.871 miles asphaltic pavement; South Texas Construction Co., Corpus Christi, \$136,697;

San Patricio and Nueces Counties—Project No. R 1052-1-5 and R 1052-3-2, FM 666, 11.517 miles grading, structures, base and surfacing; J. M. Dellinger, Inc., Corpus Christi, \$63,072;

Jack County—Project No. R 133-2-1, FM 1191, 6.993 miles grading, structures, base and surfacing; Harry Campbell, Fort Worth, \$66,815;

Gillespie County—Project No. R 1056-4-1, FM 1323, 8.160 miles grading, structures, base and flexible base, asphalt surface, concrete pavement, bridges; McKown and Sons, Austin, \$54,462;

Harris County—Project No. UI 32(11), U.S. 75, 0.648 of a mile grading, storm sewers, flexible base, asphalt surfacing, concrete pavement, bridges; Gulf Bitulithic Co. and Texas Bitulithic Co., Houston and Dallas, \$673,795;

Lavaca and Colorado Counties—Project No. F 1051(10) and (11), SH 200, 13.920 miles flexible base and asphalt concrete pavement; J. W. Perry, San Antonio, \$270,806;

Ellis and Navarro Counties—Project No. F 569(7), FI 569(10) and F 569(11), 19.251 miles hot mix asphalt concrete pavement and stabilizing shoulders; Public Construction Co., Denton, \$573,392;

Harris County—Project No. FI 32(16) lithic Co. and Texas Bitulithic, Houston structures and concrete pavement; Gulf Bitulithic and FI 466(22), 2069 miles grading, structures and Dallas, \$482,382;

Victoria and Jackson Counties—Project No. F 543(11) and (12), 17.594 miles widening existing pavement and structures

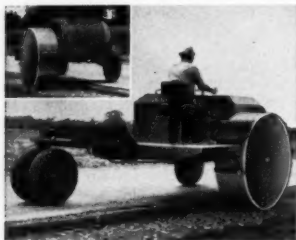
(Continued on page 50)

Equipment . . . Personnel News

Galion Brings Out Trench Roller

The Galion trench roller is said to have many important features which make for ease of operation and more effective compaction. These features include hydraulic mechanism for operating the dual steering wheels which ride on the pavement, hydraulically controlled leveling wheels, and extra-large diameter variable weight compression roll.

The manufacturer states that adjustments are provided to quickly level roller



Galion Trench Roller.

to suit any trench requirements. Frame has sufficient clearance to enable roller to work in any depths to 25 inches. Hydraulic control, through the use of a single lever, keeps the machine on a level or horizontal plane from 6 inches above to 25 inches below road surface.

It is further pointed out that the unusually large diameter of the compression roll eliminates "shoving" of materials being compacted. Compacting effort varies from 310 pounds with roll empty up to a maximum of 370 pounds (per lineal inch of roll width) with roll ballasted. The compression roll is equipped with front and rear tension scrapers and mats for moistening the roll when compacting finish materials.

U. S. Steel Reports Record Production

United States Steel Corp., New York, N. Y., announced that ingot production in 1950 amounted to 31,500,000 net tons, the highest on record for the company, representing 98.2 per cent of the company's rated annual capacity at the beginning of the year. Income for 1950 was \$215,500,000 or a return of 7.3 per cent on sales as compared with income for 1949 of \$165,900,000 or a return of 7.2 per cent. Sales for 1950 were the highest on record, amounting to \$2,956,400,000 or \$654,700,000 in excess of the 1949 figure.

Dividends declared on preferred stock amounted to \$25,200,000; on common stock, \$92,700,000. Dividends per common share equalled \$3.55. In 1949, the amounts were respectively: \$25,200,000, \$56,100,000 and \$2.15.

Working capital at the end of 1950 amounted to \$441,800,000 as compared with \$483,800,000 at the end of 1949.

"An important milestone in the history of the American steel industry was reached during 1950," according to Mr. Irving S. Olds, chairman of the board of directors for U. S. Steel. "The fact that the steel industry has reached and passed the 100 million ingot ton mark can be of deep satisfaction to the American people in these uncertain times. . . . It is about 12 per cent more than the peak wartime production of this country in 1944. It is approximately equal to the combined steel capacity of the rest of the world combined. It is more than three times the estimated steel production of Russia and its satellite countries in 1950."

International Man Elected I.C.E. Institute President

W. M. Holland, manager of manufacturer sales for the Industrial Power division of the International Harvester Co., Chicago, Ill., was elected president of the Internal Combustion Engine Institute at the organization's annual meeting and election of officers on February 15, 1951.

Mr. Holland has been an I.H. industrial power sales executive since 1948 and has been associated with the company's Industrial Power division in an executive capacity since its formation in 1944. He attended Creighton University at Omaha and the University of Nebraska, finishing in 1928 when he joined the Harvester Co.

The Internal Combustion Engine Institute, formed in 1933, is an association of internal combustion engine manufacturers who sell their products for general use. Its sixteen manufacturer members include nearly every important producer of diesel, gasoline, and gas engines.

Other officers elected to serve with Mr. Holland are Vice President, G. W. Thomas, chief engineer, automotive division, Continental Motors Corp.; Secretary, J. E. Heuser, manager of engine sales, Le Roi Co.; Treasurer, J. F. Bachman, manager of industrial engine department, Ford Motor Co. Phil Norton, vice president-sales manager, Wisconsin Motor Corp., the retiring president of the Institute, will continue as a member of the board of directors.

Crystal Lake Site of Harnischfeger Diesel Plant

Construction will start soon on a new factory and office building in Crystal Lake, Ill., to house the Diesel Division of Harnischfeger Corp., it was announced by Henry Harnischfeger, vice-president of the Milwaukee firm.

The factory, along with a smaller office structure, will occupy approximately 100,000 square feet on an 80-acre site.

Production of diesel engines is slated to start October 1. Once under way, the plant will produce models ranging from one to six cylinders in size. Plant capacity will provide for a total of between 1200 to 1500 horsepower every working day. This equals 10 six cylinder engines per day or one every 45 minutes.

The main office of the diesel division will be established at Crystal Lake. Karl Schoeppner, who was appointed eight years ago to develop the diesel program for Harnischfeger, is general manager.

Under the "P&H" trade-mark, Harnischfeger manufactures a long list of heavy machinery and equipment, including power shovels, truck cranes, excavators, overhead cranes and hoists, soil stabilizers and welding equipment. The company is also an important factor in the pre-fabricated houses industry. The new Crystal Lake plant will be the eighth for this sixty-seven-year-old company. Others are in Milwaukee, Escanaba and Port Washington.

New, Self-Contained Diesel Pile Hammer

Syntron Co., Homer City, Pa., announces a self-contained diesel pile hammer which requires no auxiliary equipment—such as steam boilers or air compressors—to maintain pressure.

This pile driving tool is 15 feet 6 inches long, has a 20 inch diameter, and weighs 11,000 pounds. Despite this compact size and light weight, the hammer delivers driving energy at the rate of 16,000 foot



Syntron Self-Contained Diesel Pile Hammer.

pounds per stroke, and is capable of 84 strokes per minute. The weight of the ram or the striking part is 5,400 pounds; the maximum power stroke is 4 feet.

The hammer fits in standard 20 inch leads, can easily be handled by a gasoline or diesel operated crane as pictured and requires two lines—one for lifting the hammer; the other for lifting the pile and for starting the hammer by lifting its piston.

One-man operated, the force of each blow is remotely controlled by means of a hydraulic system which operates similarly to automotive hydraulic brakes. The force of each blow can be varied from zero to full power; unit will idle without impact and without stalling.



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Engineer is an expert when it
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PORTLAND
HIGH EARLY STRENGTH
AIR ENTRAINING
MASONRY



The unit of the International Harvester Co., in collaboration with Florida-Georgia Tractor Co. last month held a preventive maintenance school at Jacksonville for industrial users of International equipment. The picture shows those in attendance grouped at the training school van. A barbecue luncheon was served on Florida-Georgia Tractor grounds for all. The company has a second Florida office at Tallahassee. Among the equipment it sells are construction equipment and supplies, industrial and logging machinery and trailers and dump bodies.

LeTourneau Men Tour Eleven Countries, 30,000 Miles

A practically round-the-world trip covering 30,000 miles and eleven countries which began February 19 and is scheduled to end December 22 of this year—that's the mission ahead for two men in LeTourneau's export department.

In announcing this long-planned program of the export department, Paul E. Fulford, export manager, said that its purpose is to bring to the service personnel of LeTourneau's far-flung export distributors and their customers, the latest information on maintenance and repair of LeTourneau equipment. To accomplish this, 13 schools are being held throughout the world and located in 12 different cities.

The men who are on this globe-girdling mission are R. L. (Bob) Wollberg, educational program manager, and Max Loertscher, service engineer and instructor.

At each location the school provides two weeks of training. Instruction is given on the Tournadozer, high speed rubber-tired dozing and pulling tool which has earned wide acceptance on construction jobs the world around, and on models in the LeTourneau line of Tournapulls, a materials-handling machine which excavates, hauls and spreads its own loads. All attachments and trailing units for both types of machines involved also are covered in the course of instruction given.

The first week of instruction includes electrical theory, repair, maintenance and "trouble shooting." The second week is mechanical in nature.

Instruction is given by Mr. Wollberg in English and by Mr. Loertscher in any of several languages which he commands. The men from LeTourneau headquarters are being assisted by LeTourneau resident representatives and distributor personnel.

Approximately 25 men will be instructed in each school. At the end of each school, records of each man attending will be reviewed and those who qualify will be awarded special certificates issued by LeTourneau's Export Division.

Following the opening two schools in England, the itinerary of the two headquarters men is: Casablanca, French Morocco; Karachi, Pakistan; Bombay, India; Calcutta, India; Bangkok, Siam; Johannesburg, Union of South Africa; Elisabethville, Belgian Congo; Sao Paulo, Brazil; Santiago, Chile; Caracas, Venezuela and Mexico City, Mexico.

Below—First of the series of thirteen Export Service Training Schools is put under way in Staines, England, by R. G. LeTourneau, Inc. Facing camera at left is Bob Wollberg, educational program manager, while at right is Max Loertscher, service engineer and instructor. Distributor personnel at the first school were from England, Belgium, Norway, Austria and France. Shown in the picture are the various training aids used for instructional purposes.



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EQUIPMENT**
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are long life roads...

THE best testimonial to Adnun design is the excellent condition of the miles of Adnun laid roads that have carried 15 to 16 years of heavy traffic. The oldest machine laid roads in the world are Adnun Roads. Look at the heavily traveled highway above—a part of the Hamilton-Brantford road in Ontario, one of Canada's main arteries—laid in 1936. The one below—Colorado Blvd.—one of Denver's well known streets laid in 1935. And the bottom picture—part of the Indianapolis Speedway laid in 1936.

These are but a few of many photographs in our files that show prominent traffic arteries in city, state and county systems. These are roadways that bear heavy traffic counts: Streets that take the beating of trucking and speed under a full range of weather conditions. Note the evenness of wear *clear across*, the few signs of patching, the freedom from breakdown.

The Adnun principle of continuous Course Correction assures surface smoothness and a uniformity of course thickness that no other paver can equal. The Oscillating Cutter Bar action cuts the material off at the proper level and does not tear it. Material is carried up to the parallel course and is compacted in place, making a tight joint, a joint that will not throw a car off its course. *The Adnun builds longer life roads and safer roads.*

You will be interested in the booklet, "11 Basic Things." It will give you some new thinking on black top paving equipment. Send for it.

THE FOOTE COMPANY, INC.

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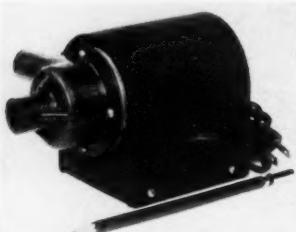


Equipment . . . Personnel News

All-Rubber Pumps Made To Handle All Liquids

The Gorman-Rupp Co., Mansfield, Ohio, has announced a new line of small centrifugal, all-rubber pumps, for handling both corrosive and non-corrosive liquids, and powered by tiny electric motors of from 1/200 to 1/35 horsepower.

Named the "Mansfield Line," the new pumps are of a size to be held on the flat of the hand, and weigh from 2 to 4



Gorman-Rupp Small Centrifugal All-Rubber Pump for Handling Corrosive and other liquids.

pounds. They are available as all-rubber pumps or as rubber and bronze or zinc. There are three types: Enclosed and skeleton units, motor-driven, and belt-drive units. First production offers three sizes in each of two series. The overall capacity range is from 504 gallons per hour at 2 foot head, to 78 gallons per hour at 10 foot head. Both series are identical in power and dimensions. Series No. 2 Models are provided with an air-handling device.

Design of these pumps is new and features a molded rubber volute, and a rubber impeller molded to a stainless steel shaft, which is mechanically connected directly to the motor shaft. A diaphragm and seal combination of molded rubber completely covers the metal-supporting member, that joins the motor and pump structures. The stainless steel shaft is the only metal in contact with the liquid being pumped.

Link-Belt Elects Vice-President And Declares Dividend

Robert C. Becherer has been elected vice-president of Link-Belt Co., Chicago, Ill. All officers who served last year were re-elected.

Mr. Becherer, who joined Link-Belt in 1923 upon graduation from Purdue University in chemical engineering, has been general manager of the company's East plant in Indianapolis since 1947 and will continue to hold this position.

A quarterly dividend of 60 cents per share of new Common stock was declared, payable June 1, 1951 to all stockholders of record May 4, 1951.

This board action followed approval of a two-for-one split of the common stock and a change from no-par to \$5 par value

per share, at the annual meeting of stockholders.

This is the 75th consecutive year of an unbroken dividend record for the company, since the incorporation of the founding company, Ewart Manufacturing Co., in 1875.

Allis-Chalmers' Report Shows \$23,119,853 Profit

The Allis-Chalmers Manufacturing Co., Milwaukee, Wis., in its annual report to stockholders disclosed a profit of \$23,119,853 for the year ended December 31, 1950, as compared with a profit of \$18,755,461 for the previous year.

The profit is equal to \$8.72 a common share after preferred dividends of \$1,167,996, as compared with a profit of \$6.99 in 1949. Total sales billed in 1950 amounted to \$343,698,400 as compared with \$351,097,878 in 1949.

W. A. Roberts, Allis-Chalmers president, said that "the 1950 report reflects the company's strong position. The tractor division exceeded its best previous peacetime sales, reaching a total of \$209,497,792. The general machinery division accounted for \$134,200,608."

Concerning 1951, he said that the company was entering a period of increased defense production. However the Allis-Chalmers president said the company's regular line of products are all vital to both the defense program and the essential civilian economy—power production and processing machinery, general industrial apparatus, farm equipment and construction machinery.

The unfilled orders in the general machinery division increased from \$97,342,031 on January 1 to \$126,158,450 on December 31, 1950.

Baldwin-Lima-Hamilton Buys Austin-Western

Marvin W. Smith, president of Baldwin-Lima-Hamilton Corp., announced last month the assets and business of Austin-Western Co., Aurora, Ill., became a part of the Baldwin-Lima-Hamilton Corp.

McClure Kelley, president of Austin-Western Co., stated that the present management and personnel will remain the same, and will continue to direct the company's operations, including manufacturing, sales and engineering. Certain Austin-Western products will be sent to other Baldwin-Lima-Hamilton plants for manufacturing, allowing the Aurora plant to concentrate on the production of road graders in greatly increased quantities, as well as a new hydraulic crane.

Mr. Kelley further stated that ever since the war Austin-Western had been prevented by inadequate plant capacity from turning out enough machinery to satisfy the ever-growing demand for its products, and that the affiliation with a company having virtually unlimited facilities would be advantageous in every respect to present and future owners of Austin-Western equipment.

Koppers Proposes Plant

Koppers Co., Inc., Pittsburgh, Pa., has taken an option on 158 acres of land at Fontana, Calif., and contemplates construction of a plant there for the making of enamel pipe coatings and roofing materials, according to Fred C. Foy, vice president and general manager of Koppers Tar Products division.

Mr. Foy said that the proposed site is adjacent to the Kaiser Steel Co. plant and that Koppers plans to use pitch made from tar obtained from the Kaiser coke ovens, processing it into high-grade enamels for pipe coatings and various types of roofing materials. A contract with Kaiser providing an adequate supply of the pitch has been arranged, Mr. Foy said.

If plans go through as anticipated, work on the new plant will be started as soon as possible and it will be in operation before the end of the year.

The Fontana plant would be the fifty-eighth one in the Koppers Company and the twenty-fifth to come under the operation of the company's Tar Products Division.

Faverty Made Vice-President By Independent Pneumatic Tool

Robert G. Faverty, managing director of Armstrong Whitworth and Co., Pneumatic Tools, Ltd., Thor subsidiary in Newcastle-On-Tyne, England, was elected a vice-president of Independent Pneumatic Tool Co. at the annual meeting of the board of directors, according to Neil C. Hurley, Jr., president.

Mr. Faverty, who assumed his present position at the head of the England subsidiary in February, was formerly manager of the Thor Chicago and Detroit branches.

The England plant director is the third vice-president on the Thor board. Others are E. R. Wyler, director of exports, and G. H. McCrae, managing director of Independent Pneumatic Tool Co., London, England. All other officers, including W. A. Nugent, executive vice-president, John A. McGuire, secretary, and James A. Lind, treasurer, were re-elected at the March meeting.

Bulldozer Booklet Issued By Caterpillar Tractor Co.

"Let's Talk Bulldozers—Built by Caterpillar" is the title of a new 16-page booklet recently issued by Caterpillar Tractor Co., Peoria, Ill.

The booklet explains how easy adjustments with "Cat" diesel track-type tractors boost production, gives brief specifications of Caterpillar diesel tractor models, and has a chart breakdown of optional D8 transmissions providing special reverse speeds for various job applications.

Also included are features of the new No. 8U bulldozer, the "Caterpillar" bulldozer blade, and testimonials of "Caterpillar" bulldozer users.

Allis-Chalmers Names Schweers Director of Sales of General Machinery Division

Chester W. Schweers has been named director of sales of Allis-Chalmers general machinery division, according to an announcement by J. L. Singleton, vice-president of the company's general machinery division.

Mr. Schweers has been connected with the company's general machinery division sales organization for more than 20 years. He joined Allis-Chalmers in 1930 and is an electrical engineering graduate of Texas Agricultural and Mechanical Engineering College.

He was assigned to the company's New Orleans district office as a sales representative in June, 1930. In February, 1942, he was named manager of the Houston office and served in that capacity until January, 1947, when he became manager of the Los Angeles district office. In March, 1950, he was appointed manager of the New England region, a post he held until his latest appointment.

Merton M. York, since June, 1950, manager of the Boston district office, has been named manager of the New England region to succeed Mr. Schweers.

An electrical engineering graduate of North Carolina State College, Mr. York became associated with Allis-Chalmers in 1939. He was a salesman in the Charlotte district office for nine years before becoming manager at Boston.

U. S. Steel Reports Stockholder Increase

United States Steel Corp., New York City, reported common stockholders on record February 9, 1951, numbered 20,896, an increase of 5,678 since November 10, 1950. On November 10, 1950, there were 195,218 common stockholders, an increase of 2,849 since August 4, 1950.

United States Steel Corp. preferred stockholders on record February 5, 1951, total 73,827, a decrease of 562 since November 6, 1950. On November 6, 1950, there were 74,389, a decrease of 577 since July 31, 1950.

The total number of stockholders as of these dividend record dates is about 259,457 comparing with 254,364 three months before, in both instances allowing for duplication of holders of both classes of stocks. The approximate total increase was 5,093 holders.

Koppers Gets Coke Battery For Crucible Steel

Koppers Co., Inc., will design and build a new battery of 29 coke ovens at the Midland, Pa., plant of Crucible Steel Company of America, it was announced recently by Joseph Becker, vice president and general manager of Koppers engineering and construction division.

The new battery of 29 Koppers-Becker combination coke ovens will carbonize 490 tons of coal per day and will be underfired with either coke oven or blast furnace gas.

Included in the contract are changes and additions to the chemical recovery equipment at the Midland coke plant.



When Rye Lake in Westchester County, N. Y. receded, cutting off three villages from water supply, the crisis was met by putting dependable Gorman-Rupp pumps to work.

10 INCH PUMP FOR THE BIG JOBS

At a total head of 15 feet this pump will deliver 4150 gallons of water per minute - more than 15 tons of water a minute. This means a torrent of 249,000 gallons per hour.

This great 10 inch self-priming centrifugal is **The Pump for the Big Jobs** -- in construction, open ditch irrigation, water supply and industrial applications.

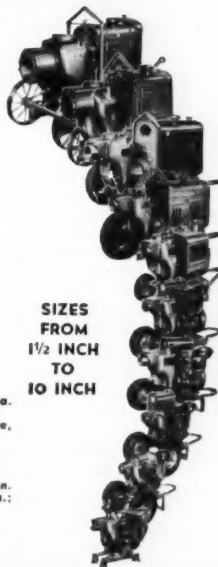
Wherever there is a large volume of water to handle call on the Gorman-Rupp "Big Boy" the 240-M, 10 inch pump.

The Model 31001, 240M, 10-inch pump can be furnished with either Gasoline Engine driven or Diesel Engine driven units.

Ask for Bulletin No. 8-CP-11 for information on full line of Gorman-Rupp Contractors' Pumps.

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DALRYMPLE EQUIPMENT COMPANY, Amory, Miss.
STATE MACHINERY & SUPPLY CO., West Columbia, S. C.
WILSON-WEESNER-WILKINSON CO., Nashville & Knoxville, Tenn.
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H. B. OWSLEY & SON, Charlotte and Raleigh, N. C.
ELPHINSTONE INC., Baltimore, Md. and Washington, D. C.
TAG EQUIPMENT CO., INC., Chattanooga, Tenn.
INGERSOLL CORPORATION, Shreveport, La.
PRIESTER MACHINERY COMPANY, Memphis, Tenn.



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THE GORMAN-RUPP COMPANY
MANSFIELD, OHIO

Equipment . . . Personnel News

Super-Scoopmobile Announced



Super-Scoopmobile has Five Cubic Yard Capacity.

Mixermobile Manufacturers, Portland, Ore., are announcing the Super-Scoopmobile, claimed to be the largest materials handling scoop of its kind in the construction industry.

The scoop bucket of the huge machine has a level capacity of five cubic yards, equivalent to over 100 bushels of material. The tires stand as tall as the average man and the whole machine weighs over 18 tons.

The heavy duty four speed forward and reverse transmission is powered by a 4 to 1 planetary drive axle from a 250 horsepower diesel engine.

The Super-Scoopmobile can be used for elevating and pouring concrete, loading and shoveling dirt and bulk materials, lifting heavy equipment and other heavy duty lifting and transporting operations.

Tractor Story Told By Caterpillar

"The Endless Track" is the title of a new sixteen page booklet (Form 30140) recently issued by Caterpillar Tractor Co., Peoria, Ill.

The well illustrated booklet tells the story of "Caterpillar" track-type tractors, their origin, the reasons behind their quality construction and performance, the advantages of the "Caterpillar" dealer organization and the results of all these features in terms of satisfied owners.

This story does not ignore the important part played by customer and operator in the success of these "Caterpillar" tractors. The encouragement and confidence of the customer is given a large share of credit for the success of the company.

Bucyrus-Erie Reports \$2.80 Dividend

In its annual report to stockholders for the year 1950, Bucyrus-Erie Co., South Milwaukee, Wis., reports shipments of \$49,586,874 and net earnings of \$4,658,772, equivalent after preferred dividends to \$2.80 per share of common stock. Comparative figures for the year 1949 were shipments of \$58,054,331; net earnings of \$6,635,033; and \$4.07 per share of common stock after preferred dividends.

In commenting on these results, William W. Coleman, chairman, states, "The

decline in shipments and net earnings was due to strikes at the South Milwaukee and Chicago plants of the company which commenced in March and which were not entirely settled until early September."

"During the final quarter," Mr. Coleman said, "we were in full production and both sales and earnings since then have been at satisfactory levels."

Allis-Chalmers Names Five Atlantic Sales Representatives

Announcement has been made of the appointment of five new sales representatives to Allis-Chalmers' general machinery division offices in the country's Atlantic region.

Those named and the district offices to which they have been assigned are John W. Becker, Syracuse; Joseph L. Lubner, Washington, D. C.; Joseph M. Duncan, Atlanta; Charles C. Leach, Philadelphia, and Floyd Blackwell, Jr., Chattanooga.

Messrs. Becker, Duncan, Blackwell and Leach are electrical engineering graduates of the University of Nebraska, Duke University, North Carolina State College, and the University of Maine, respectively. Mr. Lubner is a mechanical engineering graduate of the University of Maryland. All are veterans of World War II.

Detroit Diesel Gives Awards to Engineers

Eleven sales engineers representing Detroit diesel engine division distributors throughout the country have been awarded certificates of merit for outstanding accomplishments in their various fields during 1950.

These men, engaged in the sale and application of General Motors diesel engines to the industrial, marine and petroleum fields, qualified for the Division's annual W. T. Crowe Diamond Award and each received a diamond ring in addition to his merit certificate. The awards were made in Detroit by W. T. Crowe, general manager of the Detroit diesel engine division.

The men honored, as announced by V. C. Genn, general sales manager, were: William G. Wallace, L. B. Smith, Inc., Syracuse, N. Y.; John K. Stull, McClung-Logan Equipment Co., Baltimore, Md.; Wirt A. Branson, E. F. Craven Co., Greensboro, N. C.; Herbert F. Colby, Georgia Engine Co., New Orleans, La.; Lawrence C. Matousek, Western Machinery and Engine Co., St. Louis, Mo.

Others so honored were Chris Kuehl, Fehrs Tractor & Equipment Co., Omaha, Neb.; King D. Boyd, Stewart & Stevenson Services, Houston, Tex.; Roy M. Carr, Colorado Builders' Supply Co., Denver, Colo.; Gilmore L. Salyers, Anderson-O'Brien Co., Los Angeles, Calif.; Thurston B. Perry, West Coast Engine & Equipment Co., Berkeley, Calif.; Kenneth C. Griffith, Gunderson Brothers, Engineering Corp., Eugene, Ore.

Tractomotive Corporation Builds Materials Handling Loader

A new wheel tractor loader featuring a hydraulic torque converter drive and an entirely new design clutch-type transmission is now manufactured by Tractomotive Corp., Deerfield, Ill. It is called the TL-10 Tracto-Loader.

The single stage torque converter furnishes a smooth, constant flow of power to the drive wheels. There is practically no spinning of wheels while loading, and crowding action is definitely improved, according to the manufacturer.

The new clutch-type transmission eliminates most gear shifting. Two multiple disc clutches are built into the transmission. One is for forward speeds, the other for reverse. Only one clutch is engaged at a time. There is a selection of four forward and four reverse speed ranges.

The TL-10 is mounted on rubber tires, has a $\frac{3}{4}$ cubic yard, hydraulically controlled bucket and weighs 10,650 pounds. There is ample bucket clearance and



New Tractomotive Loader Sold through Allis-Chalmers Dealers.

reach to load average size dump trucks. Power is furnished by an Allis-Chalmers 40.5 brake horsepower gasoline engine. As in other Tracto-Loaders, the bucket is over the drive wheels rather than the steering wheels.

The Tracto-Loader is sold exclusively through Allis-Chalmers Industrial tractor dealers.

Maryland Drydock Reports \$333,703 Net Loss

The Maryland Drydock Co., Baltimore, Md., reported that operations for the year 1950 resulted in a net loss of \$333,703 after tax adjustment. Total sales amounted to \$8,069,538, compared with \$14,866,881 in 1949.

Dividends declared on Series A preferred stock were \$4.50 per share or \$33,205; on common stock, \$1.25 per share or \$375,011.

Independent Pneumatic Notes Transfers and Promotions

Transfers of three Independent Pneumatic Tool Co. branch managers and appointment of one new branch manager were announced by W. A. Nugent, Thor executive vice-president.

John B. Dempsey, for the past three years manager of Thor's Pittsburgh branch, has been named manager of the Detroit branch, succeeding Robert G. Faverty, whose appointment as managing director of Armstrong-Whitworth and Co., Pneumatic Tools, Ltd., new Thor subsidiary in England, was announced several weeks ago.

Edward W. Krantz, for the past four years manager of the New York branch, has been appointed Pittsburgh manager to succeed Mr. Dempsey.

William J. McGraw, manager of the Cleveland branch for the past two years has been appointed manager of the New York branch to succeed Mr. Krantz.

Clarence B. Bergren, service engineer, in the St. Louis territory since 1946, is the new Cleveland branch manager succeeding Mr. McGraw.

Gardner-Denver Issues Annual Report

Gardner-Denver Co., Quincy, Ill., reports that net profit for 1950 amounted to \$2,420,764 as compared with \$2,185,483 for 1949. After preferred dividends, net profit on common stock amounted to \$3.55 per share in 1950 as compared with \$3.18 per share in 1949.

Net sales for 1950 totaled \$23,706,461—an increase of \$3,093,516 or 15 per cent as compared with 1949. Sales prices were increased in the latter half of 1950 but were not sufficient to offset the higher costs of material and labor, so that the gross profit margin showed a slight decrease. Final net profit after taxes was equal to 10.2 per cent on net sales in 1950 compared with 10.6 per cent in 1949.

Regular cash dividends of \$4.00 per share were declared on preferred stock in 1950 and totaled \$91,964. Regular quarterly dividends of \$.35 per share were declared on common stock during the year. In addition, a year-end dividend of \$.35 per share on common stock was declared and paid in December, 1950. Total dividends declared on common stock in 1950 amounted to \$1,148,085, or \$1.75 per share.

G. E. Smart, D. H. Lory Named To Norwood Works Posts

Gerald E. Smart has been named a plant engineer assisting J. J. De Windt, general superintendent of maintenance, time study and tool design at Allis-Chalmers Norwood (Ohio) Works, according to an announcement by J. D. Greensward, general manager.

Mr. Smart has been employed by Allis-Chalmers since 1940. He is a mechanical engineering graduate of Marquette University and was formerly connected with the atomic power department at the company's West Allis Works.

Announcement is also made of the appointment of Dwight H. Lory to the electrical sales and engineering department

(Continued on page 49)

**FOR
LOW BIDS
EXTRA PROFITS**

**fast, tough, dependable
CLEVELANDS**

Owner records prove CLEVELANDS let you figure closer on bids—with full protection for your deadlines and your profits. You can bank on CLEVELANDS for steady bonus yardage no matter what you're digging—the advanced wheel-type design with plenty of rugged power for the roughest going means built-in higher capacity. Tough "unit-construction" means CLEVELANDS need little maintenance, means they stay on the job and stay out of the shop. CLEVELANDS load quickly and easily for fast jumps between jobs.

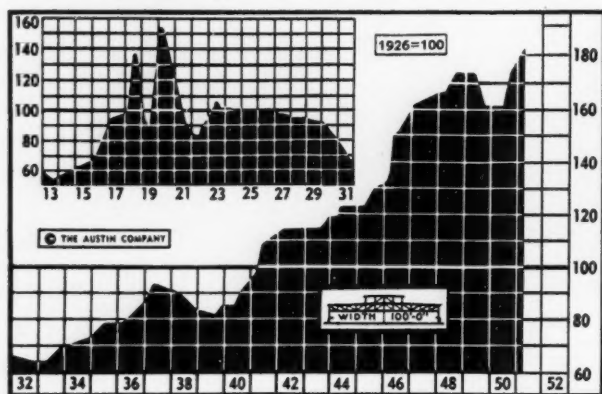
CLEVELANDS are more usable because of their compact size and easy-handling hairline maneuverability that makes short work of narrow city clearances and because of CLEVELANDS famous versatility and wide range of trench sizes that mean each machine fits more different kinds of jobs. It all adds up to faster, better trenching—absolutely dependable performance—and less expense to you. Get the full facts and figures today. The Cleveland Trencher Co., 20100 St. Clair Avenue, Cleveland 17, Ohio.



SEE YOUR LOCAL DISTRIBUTOR

ALABAMA: Birmingham—Joe Money Machinery Co. FLORIDA: Jacksonville—M. D. Moody; Miami—Llewellyn Machinery Corp. GEORGIA: Atlanta—Southern Iron & Equipment Co. KENTUCKY: Lexington—Wilson Machinery & Supply Co. LOUISIANA: New Orleans—Woodward, Wight & Co., Inc. MARYLAND: Baltimore—General Supply & Equipment Co., Inc. MISSOURI: Kansas City—Victor L. Phillips Co.; St. Louis—O. B. Avery Co. NORTH CAROLINA: Greensboro—E. F. Craven Co. OKLAHOMA: Tulsa & Oklahoma City—Leland Equipment Co. SOUTH CAROLINA: West Columbia—State Machinery & Supply Co. TENNESSEE: Knoxville—Power Equipment Co., Inc.; Memphis—Road Builders Equipment Co.; Nashville—Industrial Tractor & Equipment Co., Inc. TEXAS: Dallas and Houston—Browning-Ferris Machinery Co. VIRGINIA: Richmond—Phillips Machinery Co.

Industrial Building Costs Advance in First Quarter



Industrial building costs advanced 3 points to 182 during the first quarter of 1951, according to The Austin Company's quarterly index.

This advance reflects the limited effectiveness of wage and price stabilization efforts, according to George A. Bryant, president of the national engineering and construction firm. He pointed out that while such measures have held the rate of increase in unit costs to a minimum, their effect on final costs is necessarily limited by other factors which enter into the expense of completing any project.

"The volume of current activity has created serious material and equipment shortages which are making it impossible to attain the same high efficiency which made for progressive reduction in the cost curve during 1949, so that you have to allow more proportionately for overhead and job organization," Mr. Bryant said. "Any relief of shortages which

might result from the government's ban on non-essential construction is probably several months away, since much of the material now being produced will still be going into projects of that character which were started before the bans became effective.

"Serious shortages already apparent in certain essential materials will only be aggravated by any excess stock-piling that occurs. We can only hope that self-imposed policies of realistic allocation of materials to customers on the basis of their established needs will soon rectify the situation."

Mr. Bryant expressed his confidence in industry's over-all ability to produce the materials necessary for defense and essential civilian requirements without additional controls, if the persons responsible for the fair allocation of basic materials will keep the nation's interests in mind at all times.

Danville Plant Proposed by Corning Company

Construction of a new glass plant in Danville, Ky., to provide additional facilities for the manufacture of glass bulbs and tubing was announced last month by William C. Decker, president of Corning Glass Works.

The new plant, which will have a floor area of 270,000 square feet, will be erected on a 30-acre site and construction is scheduled to begin immediately.

"This plant is being built," said Mr. Decker, "to meet the glass bulb and specialized tubing requirements for electronic devices used in the expanding defense program. The plant will also pro-

duce bulbs and tubing used in the manufacture of incandescent lamps, the demand for which is growing with increasing industrial activity."

The Danville plant, which will employ approximately 550 people, marks Corning's latest expansion in the bulb and tubing field for which the company has been a leading supplier for nearly three-quarters of a century. It was at the company's main plant in Corning, N. Y., that the first glass bulb was successfully blown for Edison's incandescent lamp in 1879.

For more than 30 years thereafter, bulbs continued to be made by hand and not until the first World War were semi-automatic machines introduced for mass-

production. Subsequent efforts by Corning to obtain a fully-automatic method culminated in the development of the company's "ribbon" machine in 1926, which still remains the fastest glass forming machine ever built, blowing bulbs at rates up to 1,000 per minute from a continuous ribbon of molten glass.

Kentucky Asks Road Bids

Kentucky Highway Commissioner W. P. Curlin has called for bids April 20 on 26 new projects, covering 61 miles of roads. The letting lists 12 miles of state and federal construction and 49 miles of rural road construction financed by the 2-cent gasoline tax. There is also one rural highway project for six drainage structures.

Federal-aid projects are listed in the following counties:

Bell—Pineville-Harlan road, steel superstructure and concrete flooring for bridge over Cumberland River at Wasioto;

McCracken — Grahamville-Paducah road, grade, drain, widening, and bituminous surface, 8 miles;

McCracken—Hobbs road and Paducah-Wickliffe road, grade, drain, base widening, and bituminous surface, 3 miles;

Perry—Bulan-Lost Creek road, grade, drain, and traffic bound surface, .5 of a mile.

Projects financed by the state alone include those in the following counties:

Pulaski—Somerset-Mt. Victory-London road; bridge and traffic bound approaches at Buck Creek, .1 of a mile;

County roads financed by the 2-cent gasoline tax and the rural highway fund are listed in the following counties:

Union—Uniontown-Spring Grove road; Waverly-Morgantown road; Morganfield-Pride road; Uniontown-Raleigh road; Spring Grove-Uniontown road, six drainage structures.

Bath—Reynoldsville-Bethel road, reconstruction and traffic bound surface, 5 miles;

Caldwell — Creswell-Enon-Fredonia road, repairs to bridge over West Fork of Donaldson Creek near Enon;

Carroll—Carlisle road, reconstruction and traffic bound surface, 5 miles;

Daviess — Whitesville-St. Lawrence road, reconstruction and traffic bound surface, 6 miles;

Fulton—Rice Lane road, reconstruction and traffic bound surface, 1 mile;

Fulton—Troy road, reconstruction and traffic bound surface, .7 of a mile;

Knott — Vest-Talcum-Ary road, reconstruction, traffic bound surface, 3 miles;

Logan—Beechland road, reconstruction and traffic bound surface, 4 miles;

McCreary—Greenwood Cemetery road, reconstruction and traffic bound surface, .5 of a mile.

McCreary—Trammel road, reconstruction and traffic bound surface, 3 miles; Duck Run road, reconstruction and traffic bound surface, 2 miles;

Powell—Hardwick Creek road, culvert and traffic bound approaches at Hardwick Creek, .1 of a mile; Stone road, reconstruction and traffic bound surface, 2 miles.

Below—Perspective of proposed Danville, Ky. Corning Plant.



31 Commercial Buildings Approved in Southeast

Approval of 31 additional applications for permission to construct buildings in the Southeast at an estimated cost of \$1,436,447 bringing the number of applications approved to 223 and total value for the region from the middle of February to the middle of March to \$9,399,911, was announced by Merrill C. Lofton, regional director of the U. S. Department of Commerce.

The permission was necessary under a program of the Commerce Department's National Production Authority which prohibited the commencement of new construction for commercial and amusement purposes except that specifically approved by the Department of Commerce in order to conserve strategic materials in short supply for the national program of defense.

Latest approvals by States included:

Alabama—Gulf Refining Co., New Orleans, service station, Birmingham, \$46,698;

Florida—W. P. Jones Motors, Pensacola, auto dealership building, \$70,000; Pioneer Development Corporation, Miami Beach, apartment motel, \$514,378;

Georgia—A. L. Zachary Company, Atlanta, alterations to store, \$44,500; Odiss R. Moss, Gainesville, retail food store, \$51,975; Rhodes Development Co., Atlanta, new district office, \$120,000; Grayson-Robinson Stores, Inc., New York, alterations to store in Atlanta, \$37,000; Sears Roebuck & Co., Atlanta, building for telephone exchange, \$31,246; Fulton National Bank, Atlanta, two branch bank buildings in Atlanta, \$49,788 each; Realty Operations, Inc., Atlanta, wholesale and retail bakery, \$32,650; T. J. Smith Wholesale Hardware Co., McRae, warehouse and office facilities, \$31,650;

Tennessee—H. D. Morgan, Cookeville, food store, \$28,741; Texas Company, New Orleans, service station, Johnson City, \$30,300; James B. Kite, Oklahoma City, office buildings in Knoxville and Chattanooga, \$24,000 each; Esso Standard Oil Co., Chattanooga, gasoline service center, \$40,125; Gulf Refining Co., New Orleans, service station, Johnson City, \$25,738; Texas Company, New Orleans, service station, Johnson City, \$26,850; and Century Company, Chattanooga, alterations to sales agencies and garages, \$34,500;

South Carolina—Altman Brothers, Charleston, new furniture store, \$68,000.

Schlothauer Joins Smith

Lee M. Schlothauer who has been with the Geo. F. Smith Co. for the past four years in a sales capacity will now be associated with Fred H. Burgess, 2337 Papin Street, St. Louis 3, Mo.

Mr. Burgess is distributor for Superior Concrete Accessories, Inc., and the Heckman Building Products Co., both of Chicago, Ill. Items recommended for economical reinforced concrete, and masonry construction are among the many specialties available along with corrugated sheet piling, concrete chutes, hoppers, and tremies.

Now you can lay up to 12" thickness 11' wide; lesser thicknesses to 12½'



**JAEGER Paver-Type
AGGREGATE SPREADERS**
for both base and surface aggregates,
free-flowing hot or cold bituminous mix-
tures, plant-mixed stabilized soil.

Cost ½ the price
of bituminous pavers and are better
adapted to lay base materials. Also
lay top on macadam and bituminous
secondary roads, parking areas, drives.

All traction on subgrade
No displacement of loose material.
Crawlers or 4-wheel drive, to suit.

In one pass you can now lay as much as 10" of coarse stone, or as much as 12" of finer or graded materials, in 10' to 11' widths, or the same volume of material in greater widths to 12'6" with slightly less thickness. Or lay up to 25' with two of these low-cost spreaders in tandem. Place material as fast as trucks can deliver, to accurate thickness maintained by straightedge runners; blend perfect joints. Proved on hundreds of jobs, from Pennsylvania and New Jersey Turnpikes to city parking lots. Two models, to work with any size trucks.

See your Jaeger distributor now — or send for Catalog SPS-1

THE JAEGER MACHINE COMPANY

115 Dublin Ave., Columbus 16, Ohio

BITUMINOUS PAVERS • CONCRETE SPREADERS, FINISHERS • COMPRESSORS • PUMPS

New Machinery Firm Formed at Charleston

Organization of Machinery, Inc., has been announced at Charleston, W. Va. Offices of the company are at 919 Virginia Street, east. President of the new company is O. W. Robinson, now associated with West Virginia Mine Supply Co., Clarksburg. W. T. Coleman, vice president and general manager, formerly with Baldwin Machinery Co., and C. K. Payne, secretary and treasurer, owner of Engine Sales & Service Co., Inc., both of Charleston.

In addition to the officers, the directors are James S. Rodney, E. W. Allen and M. K. Gaines, all of West Virginia Mine Supply Co.; Preston A. Young, formerly with Baldwin Machinery Co., of Charleston, and Henry P. Butts, attorney.

Machinery, Inc., according to Mr. Coleman, will cater to the needs of contractors, miner, timberman, manufacturer and others in the construction and industrial field, specializing in the sale, service and rentals in the sale, service and rentals of heavy construction equipment and supplies.

Appointed Kentucky Dealer for Rosco Equipment

Sheppard Equipment Co., Inc. of Lexington, Ky., has been appointed distributor for Rosco Manufacturing Co. road and street construction and maintenance machinery including bituminous distributors, maintenance units, street flushers and cleaners, road brooms, tar kettles,

power pumping units and supply tanks.

In addition to the Rosco line, the newly appointed dealer also represents such nationally known manufacturers as La Plante-Choate Manufacturing Co., Balwin-Lima-Hamilton Corp., Hercules Motors Corp., Lippmann Engineering Works, Davey Compressor Co., Independent Pneumatic Tool Co., American Steel Dredge Co., Gar-Bro. Manufacturing Co. and Minneapolis-Moline Company.

W. E. Sheppard is president of the firm, which has headquarters at 525 Corral Street at Midland, Lexington, Ky.

Louisiana Bids Total \$99,603 on March 28

The Louisiana State Highway Department received bids March 28 totaling \$99,603 for projects in the following parishes:

Pointe Coupee — Furnishing washed gravel spot-dumped on various state routes, Purchase Requisition No. 42370A, Control Units Nos. 222-30, 222-3, 839-4 and 222-2, Paul A. Lambert, Simmesport, \$21,005;

Morehouse — Furnishing base course gravel (Grade A) spot-dumped on the Wham - Collinston Highway, Purchase Requisition No. 35906A, State Project No. 162-01-07, State Route No. 47, Bacon Sand and Gravel Co., Mer Rouge, \$46,774;

Tensas — Furnishing base course gravel (grade A) spot-dumped on the Clayton-Troy Highway, Purchase Requisition No. 34014A, State Project No. 175-02-03, State Route 347, R. G. Cruse and W. R. Slay,

Sicily Island, \$12,407;

Concordia — Furnishing base course gravel (grade A) spot-dumped on the Clayton-Little Tensas River Highway, Purchase Requisition No. 34013A, State Project No. 175-01-05, State Route No. 347, A. B. Chisum, Sicily Island, \$14,339;

Bossier — Drilling water well complete with pump and galvanized pressure tank, at fourth district headquarters, Bossier City, Purchase Requisition No. 34819A, State Project No. 881-01-04, Contract No. 4, B. F. Edington (Acme Drilling Co.), Shreveport, \$5,076.

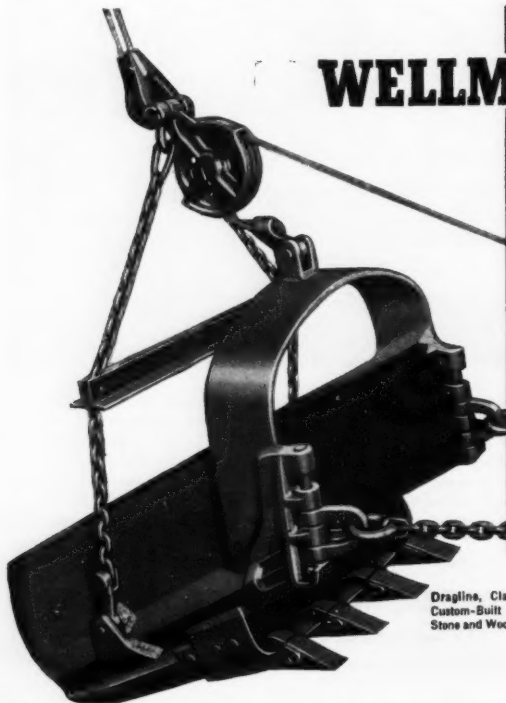
Westinghouse Plans Warehouse for Lamp Bulbs

Purchase of 3½ acres in Farmers Branch, near Dallas, Texas, as the site for a warehouse having room for nine million light bulbs has been announced by Frank C. Cline, manager of the Southwestern district, Westinghouse Lamp Division.

"The warehouse will expedite delivery of light bulbs to expanding defense industries in Texas and nearby states, vital areas in this nation's line of defense," Mr. Cline said. Texas customers now are being served by the Company's light-bulb warehouses in St. Louis, Mo., and Little Rock, Arkansas.

The warehouse site is in an area of modern light industrial plants—11 miles north of downtown Dallas, and alongside U. S. Route 77 and tracks of the Missouri-Kansas-Texas Railroad Co.

Of red brick, the new building will provide 29,000 square feet of floor area and



Dragline, Clamshell, Custom-Built Buckets Stone and Wood Grabs

WELLMAN Williams Type

MORE YARDAGE PER DAY

● Elimination of excess materials and careful weight distribution permit rapid, rhythmic operation of Wellman Dragline Buckets. Operators can cover a wider digging radius with this streamlined bucket.

Built of special alloy steel, using strong welded design, Wellman buckets provide strength and stamina for long-term economy. Perforated designs also available. You'll do better with Wellman.

Want Facts? Write for free descriptive bulletins

THE WELLMAN ENGINEERING COMPANY
7000 Central Avenue
Cleveland 4, Ohio

will have enclosed railroad siding and truck loading platforms. Completion is scheduled for summer of 1951.

It is the second major Westinghouse construction project announced in Texas within the last few months. Construction of a new light bulb manufacturing plant in Paris, Texas., now is underway.

International to Double Capacity at Natchez

Plans for doubling capacity of International Paper Company's new dissolving pulp mill at Natchez, Miss., were announced late last month by John H. Hinman, president, following approval of the program by the company's board of directors.

The Natchez mill, opened last spring, has a daily capacity of 300 tons, or an annual capacity of 105,000 tons, of dissolving pulp. Additions planned to the mill will be a duplication of the present plant and will bring the total daily capacity of the mill to 600 tons.

Mr. Hinman said that a certificate of necessity has been approved by the National Production Authority covering construction of the new facilities at Natchez. Cost of constructing the addition to the plant will be met from the general funds of the company. The addition to the Natchez mill is expected to be in production by the fall of 1952.

Opening of the Natchez mill in 1950 attracted widespread interest throughout the industry, since for the first time a newly-developed sulphate process permitted the use of hardwood in the manufacture of dissolving pulp.

"Solution of many of the difficult problems that faced us a year ago in producing dissolving pulp from hardwoods by the new sulphate process are now being worked out by the engineers and production men of our Southern Kraft Division and production from current equipment is now on an improved basis," Mr. Hinman said.

He stated that the expanded Natchez mill will have approximately 1600 employees with an annual payroll in the neighborhood of \$6,000,000.

Named Committee Scribe

Bryant Mather, chief of the special investigations branch of the Concrete Research Division, Waterways Experiment Station, Corps of Engineers, Jackson, Miss., has been elected secretary of Committee C-9 on Concrete and Concrete Aggregates of the American Society for Testing Materials at its recent meeting in Cincinnati, Ohio. Mr. Mather succeeds Stanton Walker, engineering director of the National Sand and Gravel Association and the National Ready Mixed Concrete Association of Washington, D. C.

Mr. Mather is the sixth person to hold this office since the organization of the committee in 1914. He is the first representative of the Corps of Engineers, U. S. Army, to have been elected. This committee is concerned with research on concrete and concrete aggregates. It establishes specifications and methods of testing concrete and concrete aggregates that are used throughout the world.

National Constructors Meet With Iron Workers

The National Constructors Association has met with representatives of the International Association of Bridge, Structural and Ornamental Iron Workers for a discussion of mutual problems.

The National Constructors Association is composed of contractors engaged on a national scale in engineering and construction of chemical plants, steel mills and oil refineries, projects which make extensive use of iron workers.

Two officers from the association and six from the union were present at the dinner which followed the discussions.

Cavitation Research Bulletin Released by Allis-Chalmers

A new 20-page bulletin, "Accelerated Cavitation Research," No. 02B7581, which describes cavitation-pitting tests has been released by Allis-Chalmers Manufacturing Co., Milwaukee, Wis.

Smart and Lory Named

(Continued from page 45)
at Norwood Works. Mr. Lory was a sales representative in the company's St. Louis district office for five years before taking over his new assignment. He is a mechanical engineering graduate of the University of Illinois and was employed in the crushing, cement and mining machinery section at the West Allis Works.



pledge

WHEREAS, the demand for Dickey Clay Products far exceeds the supply, despite constantly increasing production

WHEREAS, Dickey values above all else the friendship and good will of its customers and dealers...

AND WHEREAS, Dickey knows its prosperity rests on the quality of its products and service to the public...

THE W. S. DICKEY CLAY MFG. CO. PLEDGES:

THAT absolute fairness shall prevail in the distribution of Dickey products.

THAT everything possible shall be done to maintain fair and equitable prices through improved manufacturing processes.

THAT the immediate needs of all customers shall be filled before stockpiling is permitted.

THAT Dickey's ceramic research and engineering staffs shall never stop searching for improved ways to make Dickey products, so that it will be increasingly true that "...if it's made by Dickey it's better."

W. S. DICKEY CLAY MFG. CO.

KANSAS CITY 6, MO. • BIRMINGHAM 1, ALA. • CHATTANOOGA 2, TENN.
SAN ANTONIO 7, TEX. • TEXARKANA, TEX.-ARK.

Dickey Clay Pipe
ALWAYS IN DEMAND

RENT

these cost-reducing forms for concrete

Cost records from job after job prove that Economy's system of Form Engineering and Rental Service means substantial savings in TIME—MATERIAL—MONEY for GREATER PROFITS.

ECONOMY FORMS CORP.

HOME OFFICE • DES MOINES, IOWA

DISTRICT OFFICES: Kansas City, Mo.; Minneapolis, Minn.; Milwaukee, Wisc.; Ft. Wayne, Ind.; Pittsburgh, Pa.; Springfield, Mass.; Metuchen, N. J.; Charlotte, N. C.; Decatur, Ga.; Dallas, Texas; Los Angeles, Calif.; Denver, Colo.

ECONOMY

METAL FORMS

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WATER FEED CONCRETE SURFACER

MODEL WA



A portable electric machine equipped with "BERG" Model W Water Feed Head operating at low speed. Ideal for applications requiring wet rubbing of concrete surfaces. Other interchangeable "BERG" Heads available for dry rubbing applications at various speeds.

Also attachments for using wire brushes, sanding discs and buffing pads.

THE CONCRETE SURFACING MACHINERY COMPANY
4665 Spring Grove Avenue
Cincinnati 32, Ohio

Louisiana Road Bids Total \$1,208,790

The Louisiana Department of Highways on March 7 received bids totaling \$1,208,790 for projects in eight parishes. The bids follow:

West Baton Rouge and Pointe Coupee Parishes—11.165 miles of grading, Portland cement concrete pavement and widening existing reinforced concrete deck girder bridges, State Project No. 8-01-12 and 8-02-09, Federal Aid Project No. F.I.-185(3), Lobdell-Erwinville Highway, State Route No. C-1500, T. L. James & Co., Inc., Ruston, La., \$1,050,146;

Lincoln Parish—887 mile grading, drainage structures, widening existing concrete pavement and surfacing with hot bituminous mixture, State Project No. 1-08-10, Federal Aid Project No. U-110(5), Ruston-Choudrant Highway, State Route No. 4, T. L. James & Co., Inc., Ruston, La., \$198,694;

Iberia Parish—4,350 miles of grading, small drainage structures and Portland cement concrete pavement, State Project No. 237-01-05, Federal Aid Secondary Project No. S-56(2), New Iberia-Loreauville Highway, State Route No. 56, Central Construction Co., Inc., Box 1011, Monroe, La., \$304,473;

Washington Parish—5,718 miles of grading, small drainage structures, concrete slab span bridge, gravel base course, or, as an alternate, soil cement base course, and bituminous surface treatment (asphalt cement), State Project No. 263-05-08, Federal Aid Secondary Project No. S-86(3), Mt. Hermon-Clifton Highway, State Route No. 71, Henry & Hall, Dubach, La., \$291,686.40;

Cameron Parish—12,885 miles of grading, shaping roadway, small drainage structures, aggregate base course or, as alternate, soil cement base course, and bituminous surface treatment (asphalt cement), State Project No. 194-02-10, Grand Chenier-Tiger Island Highway, State Route No. 292, Barber Bros. Co., Box 629, Baton Rouge, La., \$378,701;

Vermilion Parish—Scraping or sandblasting to bare metal and painting one (1) steel ferry barge, located in Vermilion Parish, State Project No. 737-00-48, Pelican Shipyard & Machine Shop, Rt. 1, Box 235, Plaquemine, La., \$1,635;

Orleans Parish—Furnishing clam shell or, as an alternate, reef shell spot-dumped on the Paris road, State Project No. 148-03-03, Stevens & Company, Inc., Industrial Canal & Highway No. 90, New Orleans 22, La., \$16,250;

Madison Parish—Furnishing bridge materials stock-piled at bridge site, State Project No. 352-02-01, Roundaway Bayou Bridge, State Route No. 1129, Items 4-8-2P & 6-1-8—Newsom Brothers, Box 607, Columbia, Miss., \$12,377; Item 4-8-4X—Austin Bridge Co., Box 1590, Dallas, Texas, \$192;

Campbell and Kay Work on Highway 155 Job

Campbell & Kay, of Tyler, Texas, have work underway on eight and one-half miles of 25-foot flexible base and seal coat on State Highway 155 in Smith County.

Equipment used includes a Lima Paymaster dragline, D-7 Caterpillar with 'dozer, AD-4 and AD-3 maintainers and a No. 12 Caterpillar.

Texas Road Bids (Continued from page 37)

and resurfacing with hot mix asphaltic surface treatment: Heldenfels Brothers, Rockport, \$483,293;

San Patricio Counties—Project No. F 180(7) and F 377 (2) and (3), 6,908 miles grading, structures, flexible base and hot mix asphalt concrete pavement: J. M. Delinger, Inc., Corpus Christi, \$511,969;

Lee County—Project No. F 9(5), 6,662 miles grading, structures, foundation course, and asphaltic surfacing: Holland Page, Austin, \$252,757;

Case County—Project No. F 1090(2), F 435(7), F 457(4), 16,683 miles grading, structures, flexible base and asphaltic surfacing: H. R. Henderson and Co., Marshall, \$247,085;

Dallas County—Project No. F 634(16) and SG 1519(2), SH 356 and 183, 3,656 miles grading and structures and C.R.I. and P. Overpass: John T. Leslie, Waxahatchie, \$378,080;

Limestone and Freestone Counties—Project No. S 189(2) and (3), SH 164, 6,677 miles flexible base and one-course surface treatment: Fred Hall and Son, Valley Mills, \$102,246;

San Saba—Project No. R 1240-2-1, FM 1480, 5737 miles grading, structures, base and surfacing: Fred Hall and Son, Valley Mills, \$42,709;

Gonzales County—Project No. V 1509-1-1, FM 1586, 2,777 miles grading, structures, base and surfacing: Holland Page, Austin, \$45,649;

Floyd County—Project No. RV 800-1-1, R 800-1-2 and 3, FM 130, 13,205 miles grading, structures, base and surfacing: Bryan and Hoffman, Plainview, \$11,109;

Nueces County—Project No. C 101-6-12, U.S. 181, operating machinery for 60-foot bascule span: Austin Bridge Co., Dallas, \$33,185;

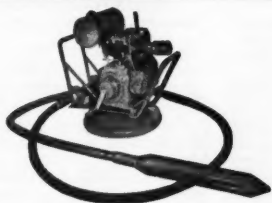
Baylor County—Project No. C 156-6-10, U.S. 277, 9,419 miles grading, foundation course and one-course surface treatment: F. N. Lambert, Albuquerque, \$49,519;

San Patricio and Refugio Counties—Project No. C 180-6-10, C 371-3-18 and C 371-4-9, SH 35 and U.S. 77, 26,649 miles asphaltic concrete pavement: J. M. Delinger, Inc., Corpus Christi, \$85,653;

Sherman County—Project No. RV 1489, FM 1573, 19,268 miles grading, structures, base and surfacing: Bell, Braden, Barker and Gilvin, Inc., Amarillo, \$167,518;

Hutchinson County—Project No. RV 1515-3-1, FM 1598, 9,807 miles grading, structures, base and surfacing: Cooper and Woodruff, Dallas, \$93,086;

Terrell, Winkler, Ector, Martin, Upton, Crockett, Pecos and Ward Counties—Project Nos. C 21-7-16, C 354-1-7, C 463-7-6, C 494-2-5, etc., U.S. 90, SHU 115, 302, 137, 51, FM 1053 and 516, 113,438 miles seal coat: Hugh McMillan, El Paso, \$209,575; Calhoun, Jackson and Victoria Counties—Project Nos. C 144-5-13, C 144-5-14, C 356-1-0, C 370-4-6, etc., SH 238, 183, 295, 111, 172 and 234, 59,431 miles seal coat: Cage Brothers, San Antonio, \$43,923;



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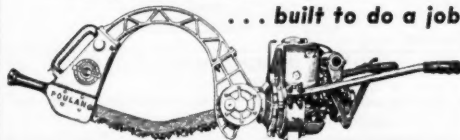
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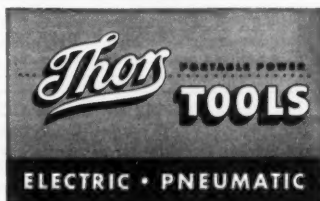
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SOUTH'S CONSTRUCTION BY STATES

	March, 1951	Contracts Awarded to be March, 1951	Contracts Awarded to be First Three Months 1951	Contracts Awarded to be First Three Months 1950
Alabama	\$29,033,000	\$63,377,000	\$126,489,000	\$119,904,000
Arkansas	6,427,000	31,437,000	76,377,000	11,970,000
Dist. of Col.	9,648,000	6,480,000	13,811,000	11,470,000
Florida	35,800,000	48,642,000	103,626,000	57,219,000
Georgia	23,189,000	12,621,000	48,321,000	26,909,000
Kentucky	4,963,000	38,793,000	367,888,000	7,753,000
Louisiana	51,763,000	50,413,000	196,716,000	72,765,000
Maryland	44,676,000	28,548,000	172,600,000	83,404,000
Mississippi	47,567,000	25,782,000	63,322,000	24,616,000
Missouri	10,913,000	61,798,000	80,137,000	31,434,000
N. Carolina	21,698,000	23,198,000	54,721,000	37,592,000
Oklahoma	7,190,000	25,379,000	25,982,000	24,050,000
S. Carolina	16,872,000	14,679,000	397,804,000	30,885,000
Tennessee	10,303,000	63,968,000	53,524,000	38,375,000
Texas	175,139,000	129,609,000	417,271,000	164,059,000
Virginia	31,899,000	92,819,000	76,181,000	75,672,000
W. Virginia		2,578,000	26,323,000	5,256,000
TOTAL	\$577,160,000	\$718,121,000	\$2,301,493,000	\$719,333,000

South's Contract Value of First Quarter Peak

(Continued from page 16)
of projects under the Corps of Engineers military construction program. Much of it will be negotiated to facilitate work, but the preferred method in some engineer districts is to advertise for bids. The cost-plus-fixed-fee method will not be used in at least one district when the other procedures are discredited.

Engineer Procurement

(Continued from page 26)
contract.
It is emphasized that it is not only unnecessary, but also undesirable for vendors to go to Washington to solicit military supply procurement business with the Corps of Engineers. The program has been decentralized to the field, where all such procurement is accomplished.

For more definitive instructions in the mechanics of dealing with the Army in these matters, it is suggested that prospective vendors secure a copy of the booklet entitled: "How to Sell to the United States Army—A Pamphlet Designed to Assist the Businessman."

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INDUSTRIAL

	March, 1951	Contracts Awarded to be March, 1951	Contracts Awarded to be First Three Months 1951	Contracts Awarded to be First Three Months 1950
Ala.	\$16,069,000	\$4,816,000	\$79,640,000	\$6,000,000
Ark.	55,000,000	12,857,000	60,000,000	15,627,000
Fla.	12,406,000	24,230,000	10,814,000	352,900,000
Ga.	4,642,000	2,550,000	10,814,000	352,900,000
Ky.	3,490,000	34,807,000	352,900,000	352,900,000
La.	39,310,000	27,327,000	134,486,000	102,488,000
Md.	25,477,000	2,621,000	102,488,000	141,787,000
Miss.	37,994,000	18,957,000	24,073,000	7,392,000
Mo.	4,429,000	15,002,000	9,350,000	372,524,000
N. C.	380,000	21,671,000	7,932,000	27,924,000
Okl.	4,407,000	2,035,000	7,932,000	27,924,000
Tenn.	1,947,000	40,377,000	22,265,000	22,265,000
Tex.	139,052,000	53,847,000	27,234,000	22,265,000
Va.	500,000	44,288,000	22,265,000	22,265,000
W. Va.		1,900,000	22,265,000	22,265,000
TOTAL	\$344,013,000	\$307,418,000	\$1,542,016,000	

PUBLIC BUILDING

(City, County, State, Federal; Schools)

	March, 1951	Contracts Awarded to be March, 1951	Contracts Awarded to be First Three Months 1951	Contracts Awarded to be First Three Months 1950
Ala.	\$2,910,000	\$3,130,000	\$5,596,000	\$1,780,000
Ark.	835,000	480,000	1,780,000	1,780,000
D. C.	9,595,000	3,480,000	13,515,000	22,021,000
Fla.	5,267,000	4,275,000	5,432,000	5,432,000
Ga.	3,110,000	3,555,000	740,000	3,941,000
Ky.		740,000	13,637,000	2,106,000
La.	2,548,000	4,671,000	34,240,000	3,690,000
Md.	6,013,000	10,390,000	6,410,000	19,492,000
Miss.	738,000	2,670,000	3,594,000	5,524,000
Mo.	3,431,000	7,618,000	11,051,000	8,045,000
N. C.	6,474,000	6,559,000	19,492,000	31,717,000
Okl.	1,022,000		5,524,000	26,226,000
S. C.	3,492,000	3,594,000	8,045,000	2,960,000
Tenn.	5,387,000	4,070,000	11,051,000	2,960,000
Tex.	9,362,000	18,549,000	31,717,000	2,960,000
Va.	16,428,000	11,412,000	26,226,000	2,960,000
W. Va.		450,000	2,960,000	2,960,000
TOTAL	\$80,272,000	\$85,563,000	\$217,637,000	

PRIVATE BUILDING

(Assembly, Commercial, Residential, Office)

	March, 1951	Contracts Awarded to be March, 1951	Contracts Awarded to be First Three Months 1951	Contracts Awarded to be First Three Months 1950
Ala.	\$3,499,000	\$5,271,000	\$12,506,000	6,365,000
Ark.	2,534,000	6,365,000	8,112,000	2,320,000
D. C.		2,320,000	25,156,000	4,566,000
Fla.	6,233,000	9,222,000	9,084,000	2,731,000
Ga.	5,234,000	4,566,000	21,286,000	7,768,000
Ky.			41,656,000	12,523,000
La.	1,337,000	9,940,000	1,300,000	6,000,000
Md.	6,216,000	5,853,000	24,413,000	25,770,000
Miss.	562,000	280,000	18,379,000	128,000
Mo.	579,000	20,728,000		
N. C.	6,613,000	5,714,000		
Okl.		6,000,000		
S. C.	5,662,000	6,000,000		
Tenn.	1,830,000	1,400,000		
Tex.	6,592,000	25,770,000		
Va.	9,323,000	9,930,000		
W. Va.		128,000		
TOTAL	\$56,114,000	\$110,509,000	\$277,562,000	

PUBLIC ENGINEERING

(Dams, Drainage, Waterworks, Sewers, etc.)

	March, 1951	Contracts Awarded to be March, 1951	Contracts Awarded to be First Three Months 1951	Contracts Awarded to be First Three Months 1950
Ala.	\$2,346,000	\$48,790,000	\$15,825,000	5,825,000
Ark.	3,938,000	11,649,000	157,000	25,736,000
D. C.	53,000	180,000	10,306,000	931,000
Fla.	5,234,000	7,885,000	11,401,000	6,716,000
Ga.	7,294,000	920,000	2,868,000	2,286,000
Ky.	931,000	3,246,000	1,069,000	7,384,000
La.	6,153,000	7,225,000	4,403,000	7,124,000
Md.	4,864,000	10,942,000	32,430,000	961,000
Miss.	1,111,000	5,335,000		
Mo.	518,000	10,485,000		
N. C.	944,000	8,012,000		
Okl.	5,300,000	7,384,000		
S. C.	2,365,000	2,300,000		
Tenn.	325,000	17,101,000		
Tex.	7,657,000	21,862,000		
Va.	278,000	22,525,000		
W. Va.		500,000		
TOTAL	\$49,511,000	\$177,865,000	\$134,963,000	

ROADS, STREETS, BRIDGES

	March, 1951	Contracts Awarded to be March, 1951	Contracts Awarded to be First Three Months 1951	Contracts Awarded to be First Three Months 1950
Ala.	\$4,209,000	\$1,370,000	\$10,222,000	60,000
Ark.	60,000	166,000	134,000	18,096,000
D. C.			6,825,000	1,632,000
Fla.	3,660,000	1,030,000	8,921,000	4,428,000
Ga.	2,919,000	1,030,000	5,712,000	14,245,000
Ky.	1,632,000	7,965,000	3,304,000	7,350,000
La.	2,415,000	1,950,000	26,914,000	8,571,000
Md.	2,106,000	2,140,000	1,358,000	
Miss.	1,182,000	1,340,000		
Mo.	1,956,000	7,965,000		
N. C.	7,287,000	2,380,000		
Okl.	868,000	700,000		
S. C.	746,000	750,000		
Tenn.	214,000	820,000		
Tex.	12,626,000	9,811,000		
Va.	5,370,000	5,544,000		
W. Va.				
TOTAL	\$47,250,000	\$36,766,000	\$129,325,000	

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Baltimore Water Tunnel

(Continued from page 21)

was about 100 feet of the former at the working face. Hauling was done on the 24-inch rail. Cars were of two and three-quarters-yard capacity. Seven-ton storage battery locomotives pulled the cars to the shafts, where the muck was dumped into a hopper and raised to the surface.

The shaft headframes were constructed of tubular steel and usually rose to a height of about 80 feet. Each was equipped with a platform cage lift, this operated with a counter-balance by a single drum mine hoist. The cages were operated on a two-part line. Load speed was 250 a minute. They had mechanical safety devices designed to hold at full load in event of cable failure.

Compressed air was delivered to the terminal shafts by diesel compressors at 1,500 cubic feet a minute. Electrically-driven compressors furnished the intermediate shafts at 2,600 feet a minute. There were four of the former; three of the latter. High tension electric power was purchased locally, transformed at each shaft to 400 volts. Water was collected where necessary in the tunnel, gathered by electric and air pumps, carried by 6-inch line to the sumps at the shafts where it was pumped to the surface.

Eventually water from the Patapsco River will be filtered at a new plant planned at the site of the Druid shaft. Plans for this project are to be finished in 1952. Chlorination for both the Patapsco and Gunpowder is to be done at the Montebello filtration plant. Cost of the plant, which will have a capacity to convert 24,000 pounds of liquid chlorine to the required solution daily, will be \$400,000.

The tunnel and dam and the subsequently proposed projects are being carried out under Bernard L. Werner, head of the Bureau of Water Supply's division of plant improvements, which also is making the plans for the Liberty dam, with William L. Iardella, working on the dam design and Gordon L. O'Brien on the chlorine plant. J. M. Kinnear was responsible for design of the newly completed dam, with H. I. Mettee participating also, the latter being an assistant resident engineer, together with George A. Morris, Charles N. Berigold and Jerome I. Kelly. Cameron Cromwell was in charge of surveys; A. W. Kammer, his assistant.

Inspectors for the city were F. P. Boxley, Lake E. Dickenson, William T. Farrell, William K. Haggerty, Wilbin W. Hazlett, William C. Lane, Anthony J. Marchetti, Carl S. Miller and Thomas E. Rutley.

Whitman, Requardt and Associates prepared plans and specifications on the first section of the tunnel. The second section was designed by the city under supervision of Schuyler C. Blackburn, associate engineer in charge. All were under Leon Small, Baltimore water engineer, and Joseph S. Strohmeier, deputy water engineer, of the Department of Public Works, of which Paul L. Holland is director and Dr. Abel Wolman, consulting engineer.

Samuel R. Rosoff is president of the contracting organization bearing his name. Vice presidents are Stanley Rosoff and Arthur H. Diamant. M. L. McLean is chief engineer; P. S. Miller, assistant chief engineer, and A. T. Araneo, chief field engineer. J. F. Holden is general superintendent in charge of the project. George Underwood was tunnel superintendent. Fred Johnson was superintendent of equipment and also was in charge of placing all concrete on the third contract.

Samuel R. Rosoff

Samuel R. Rosoff, president of Samuel R. Rosoff, Ltd., died April 9 from complications following abdominal surgery at Johns Hopkins Hospital, Baltimore.

Sixty-eight years old, Mr. Rosoff was the builder of many projects, among which were the Baltimore water tunnel, the Sixth and Eighth Avenue subways in New York, Gatun Locks of the Panama Canal and the Pasequilla aqueduct in Mexico.

He came to the United States as an immigrant boy of 10, leaving Minsk, Russia, after the death of his father. His first job was selling newspapers, the meager profits from which he ingeniously multiplied into a great construction business.

Texas Dredging Bids Opened by Engineers

Three bids received by Col. Ellsworth I. Davis, Galveston district engineer for dredging the Port Aransas - Corpus Christi Waterway in Nueces County, Tex., it was shown the apparent low bidder was the Great Lakes Dredge & Dock Co., of New Orleans, La., amount, \$241,090. Second low was the Atlantic, Gulf & Pacific Co., of New York, N. Y., with a \$241,600 bid. Standard Dredging Corp. was third low with a \$245,510 bid.

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AMERICAN STEEL & WIRE CO.	7	HALLIBURTON PORTLAND CEMENT CO. (Texas State Section)	13	PARK TRACTOR CO., GEORGE (Georgia State Section)	13
Agency—Batten, Barton, Durstine & Osborn	—	Agency—Ben W. Adams, Virginia Agency	—	PARSONS CO. (Kentucky, Maryland, Mississippi, Oklahoma, Tennessee, Virginia & West Virginia State Sections)	—
AMERICAN STEEL DREDGE COMPANY	51	HAMPTON ROADS TRACTOR CO. (Virginia State Section)	14A	Agency—Andrews Agency, Inc.	52
Agency—Willis S. Martin	—	HARNISCHFEGER CORPORATION	53	PENNSYLVANIA DRILLING COMPANY	52
ANTHONY COMPANY	—	Agency—The Buchen Company	—	Agency—Edward M. Power Co., Inc.	51
Agency—Biddle & Co.	—	HARRISON & SONS, INC., GAINES W. (North & South Carolina State Sections)	13	POULIN SAW CO. (Georgia State Section)	14
ARUNDEL CORP.	—	HENDON MANUFACTURING CO., INC.	39	Agency—Bozell & Jacobs	—
ATLANTIC STEEL CO.	—	Agency—Stolus Advtg. Agency	—	POWER EQUIP. CO. (North Carolina State Section)	14J
Agency—Lowe & Stevens	—	HERMITAGE PORTLAND CEMENT CO.	—	POWER EQUIP. CO. (Tenn. State Section)	14C
AUSTIN-WESTERN COMPANY	56	Agency—George H. Hartman Co.	—	—	—
Agency—The Advertising Corp.	—	HUBER MANUFACTURING COMPANY	—	—	—
AUTOLINE OIL CO. (Md.-D. C. Section)	14E	Agency—Jay H. Malish Company	—	—	—
Agency—Batten, Barton, Durstine & Osborn	—	HUNT & SONS, J. B. (North Carolina State Section)	14	—	—
—	—	HUNT MACH. CO., JEFF (South Carolina State Section)	14E	—	—
BAKER MANUFACTURING CO.	—	—	—	—	—
Agency—Stencen Curtis, Inc.	—	INDEPENDENT PNEUMATIC TOOL CO.	51	—	—
BARBER-GREENE CO.	55	Agency—Connor & Watson	—	—	—
Agency—The Buchen Co.	—	INDUSTRIAL EQUIPMENT CO. (South Carolina State Section)	14C	RISH EQUIPMENT CO. (Virginia & West Virginia State Sections)	14
BIRMINGHAM SLAG CO. (Alabama, Florida & Tennessee State Sections)	14C	INSLEY MFG. CO. (Kentucky, Virginia & West Virginia State Sections)	14C	ROSCO MFG. CO. (Kentucky State Section)	—
(Mississippi State Section)	11	Agency—A. L. Perkins & Co.	—	Agency—Foulke Agency, Inc.	14
Agency—Parker, Luckie & Associates	—	INTERNATIONAL HARVESTER CO.	22	—	—
BRADY & ASSOC., JOE H. (Alabama State Section)	13	Agency—Aubrey, Moore & Wallace, Inc.	—	—	—
BROS. BOILER & MFG. CO., WM. (Alabama State Section)	14E	—	—	—	—
Agency—Alfred Colle Co.	—	JAEGER MACHINE COMPANY	47	SALEM FOUNDRY & MACHINE WORKS	52
BUCKRUS-ERIE	—	Agency—Mumm, Mullay & Nichols	—	SEABROOK TRUCK & TRACTOR CO. (Florida State Section)	14H
Agency—Bert S. Gittins	—	JOHNSON CO., C. S. (Kentucky, Maryland, Missouri, Oklahoma, Tennessee, Virginia & West Virginia State Sections)	—	SERVICE SUPPLY CORP. (Md.-D. C. & Virginia State Sections)	14H
—	—	Agency—Andrews Agency, Inc.	—	SHELLY TRACTOR & EQUIP. CO. (Florida State Section)	14L
CAROLINA CONCRETE PIPE CO. (North & South Carolina State Sections)	—	KNORR OF TAMPA, INC., J. FRANK	—	Agency—Hosler Advertising, Inc.	—
CAROLINA TRACTOR & EQUIP. CO. (North Carolina State Section)	14E	KOEHRING CO. (Kentucky, Maryland, Missouri, Oklahoma, Tennessee, Virginia & West Virginia State Sections)	53	Agency—Cable, Edwards	—
Agency—Hosler Advertising, Inc.	—	Agency—Andrews Agency, Inc.	—	Agency—Morgan Advertising Co.	—
CHRISTHILL & CO., INC., STUART M. (Md.-D. C. Section)	14G	KOPPEL CO., INC. (Texas State Section)	12	SOUTHERN EQUIP. SALES CO. (South Carolina State Section)	14A
CLEVELAND TRENCHEER COMPANY	45	Agency—Batten, Barton, Durstine & Osborn	—	SOUTHERN LIGHT TOWER REGATE CORP. (North Carolina, South Carolina State Sections)	14D
Agency—Gates-Bourgeois	—	KWIK-MIX CO. (Kentucky, Maryland, Missouri, Oklahoma, Tennessee, Virginia & West Virginia State Sections)	—	(Virginia State Section)	14G
COLUMBIA STEEL CO.	7	Agency—Andrews Agency, Inc.	—	SQUARE DEAL MCHY. & SUPPLY CO. (Florida State Section)	14H
Agency—Batten, Barton, Durstine & Osborn	—	LACLED STEEL COMPANY	—	STANDARD CONSTRUCTION CO. (Virginia State Section)	14F
CONCRETE SURFACING MACHINERY CO.	50	Agency—Batz-Hodgson-Newwoehner Advtg. Agency	—	STATHAM MACHINERY & EQUIP. CO. (Georgia State Section)	14C
CONSTRUCTION EQUIPMENT CO. (Alabama State Section)	13	LeTOURNEAU, INC., R. G. (South Carolina State Section)	14L	STOCKBRIDGE STONE CO. (Georgia State Section)	14C
CONSTRUCTORS SUPPLY CO., INC. (North Carolina State Section)	14H	(Virginia State Section)	13	Summers Road Machinery Co. (South Carolina State Section)	14F
CONTRACTORS EQUIPMENT CO. (West Virginia State Section)	14D	LINK-BELT SPEEDER CORPORATION	9	SYDOR PUMP & WELL CO., INC.	52
CONTRACTORS SERVICE, INC. (North Carolina State Section)	14J	Agency—Klau-Wan Pietersom-Dunlap Assoc.	—	—	—
CORSON CO., INC. (Virginia Section)	14D	LITTLEFORD BROS., INC.	—	—	—
CLIVEN CO., E. F. (North Carolina State Section)	14X	Agency—Jaap-Orr Co.	—	—	—
CUMBERLAND PORTLAND CEMENT CO.	6	LOUIS CO., INC., JOHN C. (Md.-D. C. Section)	14B	—	—
Agency—George H. Hartman Co.	—	LUCY COLEMAN MFG. CORP.	—	—	—
—	—	Agency—Power & Condon	—	—	—
DETROIT DIESEL ENGINE DIV.—G. M. Corp.	19	—	—	—	—
Agency—Kudner Agency, Inc.	—	M & G ARMATURE & GENERATOR SERVICE, INC. (Md.-D. C. Section)	14B	—	—
DICKEY CLAY MANUFACTURING CO., W. S. (Alabama State Section)	—	MARION POWER SHOVEL CO.	—	—	—
Agency—Robertson & Buckley, Inc.	—	Agency—Jay H. Malish Co.	—	—	—
DIETRICH BROS., INC. (Maryland, North Carolina & Virginia State Sections)	14A	McCANN STEEL CO. (Tenn. State Section)	14K	—	—
Agency—H. W. Buddemeier Co.	—	McGHAN PATENT SCAFFOLDING CO. (Md.-D. C. Section)	14G	—	—
DRAVO-DOYLE COMPANY	53	MINE & CONTRACTORS SUPPLY CO. (Alabama State Section)	14J	—	—
—	—	MITCHELL DISTRIBUTING CO. (North Carolina State Section)	—	—	—
ECONOMY FORMS COMPANY	50	Agency—Andrews Agency, Inc.	—	—	—
Agency—The Blakemore Company	—	MONEY MACHINERY CO., JOE (Alabama State Section)	14D	—	—
ELPHINSTONE, INC. (Md.-D. C. Section)	14H	MOTT CORE DRILLING COMPANY	52	—	—
—	—	—	—	—	—
FLEX-PLANE	—	NEFF-THOMAS MCHY., INC. (Florida State Section)	12	—	—
Agency—Meek & Thomas, Inc.	—	NORTH CAROLINA EQUIP. CO. (North Carolina State Section)	14A	—	—
FLORIDA EQUIPMENT CO. (Florida State Section)	—	NORTHWEST ENGINEERING COMPANY	3	—	—
Agency—Andrews Agency, Inc.	—	Agency—Russell T. Gray, Inc.	—	—	—
FLORIDA FRUIT CO.	53	—	—	—	—
FLORIDA-GEORGIA TRACTOR CO. (Florida & Georgia State Sections)	—	OCONEE CLAY PRODUCTS CO. (Alabama, Florida, Georgia, South Carolina, Tennessee State Sections)	14G	—	—
FOOTE COMPANY, INC.	40, 41	Agency—Pratt-Hughes Service	—	—	—
Agency—Russell T. Gray, Inc.	—	OLIVER CORPORATION, CLETRAC Div.	31	—	—
—	—	Agency—The Buchen Company	—	—	—
GALION IRON WORKS & MFG. CO.	27	—	—	—	—
Agency—Morgan Advertising Co.	—	—	—	—	—
GARDNER-DENVER COMPANY	10	—	—	—	—
Agency—The Buchen Company	—	—	—	—	—
G. M. CORP.—DETROIT DIESEL ENG. DIV.	19	—	—	—	—
Agency—Kudner Agency, Inc.	—	—	—	—	—
GENERAL SUPPLY & EQUIP. CO. (Md.-D. C. Section)	—	—	—	—	—
Agency—Edward W. Robotham Co.	—	—	—	—	—
GIBBS CORP. (Florida State Section)	14L	—	—	—	—
Agency—Hosler Advertising, Inc.	—	—	—	—	—
GILL EQUIPMENT CO. (Georgia State Section)	14H	—	—	—	—
GORMAN-RUPP CO.'s Radiator Service	43	—	—	—	—
Agency—Coleman	—	—	—	—	—
GRAY CONCRETE PIPE COMPANY	52	—	—	—	—

Barber-Greene



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The Hydra-Crowd — hydraulic transmission of power to the driving wheels — allows the operator of the Runabout, with a twist of the wrist, to keep it going at top digging efficiency through varying soil conditions.

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203

Outstanding Runabout Performance Features

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5½", 7½", 10½" cutting widths
down to 48" deep
15 m.p.h. road speed
Control of digging from cab
or ground

Fastest digging in everything from
loam to coral rock
Instant stop—quick reverse
Digs clean trench—no ramp to be
dug by hand
One-man operation

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